610.5
M638q
JUL 21 1933

THE MILBANK MEMORIAL FUND

QUARTERLY BULLETIN

JULY - 1933

THE MILBANK MEMORIAL FUND

QUARTERLY BULLETIN

BERTRAND BROWN
EDITOR

CONTENTS

MASS EDUCATION
BERTRAND BROWN

• • •

INTERPRETING MEDICINE TO THE PUBLIC
IAGO GALDSTON, M.D.

• • •

A PROJECT IN RURAL SCHOOL HEALTH EDUCATION
RUTH E. GROUT

• • •

DISTRICT HEALTH ADMINISTRATION IN NEW YORK CITY

• • •

THE PREVALENCE OF TUBERCULOUS INFECTION IN A RURAL COMMUNITY IN NEW YORK STATE
EDGAR SYDENSTRICKER AND JEAN DOWNES

• • •

THE X-RAY IN TUBERCULOSIS CASE FINDING
MARGARET WITTER BARNARD, M.D.

• • •

NEWS DIGEST

JULY • 1933
VOL. XI NO. 3

The Milbank Memorial Fund QUARTERLY BULLETIN is published by the Milbank Memorial Fund, 40 Wall Street, New York. Printed in the U. S. A.

THERE are pictured on accompanying pages a few of the instrumentalities which modern industry maintains for the communication of ideas, images and emotions.° Mechanisms like these, creations of the inventive genius of man, have made the world small . . . The masses breakfast with one or more of a dozen great news-gathering agencies. Their tears flow over the sacrifices of the same screen-depicted mother, and their ribs bulge concomitantly over the capers of the same Mickey Mouse. They know the fighter's down before he's counted out. They know it simultaneously—as a nation. Americans hear England's king five hours before he speaks . . . Mass education, or what in their recently published "Communication Agencies and Social Life" Malcolm M. Willey and Stuart A. Rice call 'purposive mass impression,' has never before been possible on such an extensive scale. "Any use of these mechanisms," these authors write, "inevitably involves far-reaching effects upon social attitudes and behavior. These effects may be unpremeditated by those in whose control the operation of the mechanism rests. On the other hand, they may be premeditated in keeping with objectives of private interest.

"A communication system fraught with greater possibilities for evil or for good has never before existed on so vast a scale. It is at once terrifying and inspiring; terrifying, because of the possibilities it opens for the accomplishment of selfish ends; inspiring for its potentialities of social self-control."

°Photos by Margaret Bourke-White (courtesy of *Fortune*), A. Tennyson Beale, A. Shaykhet, Radio-Keith-Orpheum, Metro-Goldwyn-Mayer and Lewis Hine.

MASS EDUCATION

by BERTRAND BROWN[1]

NEWS travels the seven seas by today's radio quicker than it traveled a city block by yesterday's post. Means for transmitting information are available on a scale hitherto undreamed of. An estimate of the Columbia Broadcasting System placed 16,026,620 radio sets in homes in the United States on January 1, 1932. As resources for the widespread communication of ideas, images and emotions have been invented, improved and brought into general use, they have been quickly utilized—both by industry to extend business and commerce and by innumerable organizations, public and private, national, sectional and local, to promote programs for the improvement of various phases of individual and community life. The accumulated value of money and effort expended through these channels is tremendous.

In varying degrees contributions have been made by these media to the advancement of popular knowledge in all fields of human endeavor. Notwithstanding this progress a vast amount of knowledge, long demonstrated as essential to the welfare of the individual and of the community, remains uninterpreted and therefore ungrasped and unapplied. "Ideas travel quickly enough in the upper and rarefied air of scholarship and highly trained minds but," as Nicholas Murray Butler recently observed, "they move with the sluggish slowness of a glacier over and among the great masses of the population whose habits and whose prejudices are deeply

[1]Read before the Public Health Education Section of the American Public Health Association at the sixty-first annual meeting at Washington, D. C., October 24, 1932.

ingrained and whose outlook on life is limited by the walls of their own gardens."

A notable example is present in the public health field, the expansion of which in the United States has been attended by the progressive use of channels which civilization has developed for the popular dissemination of information. There are few projects in the field of public health in the development of which mass education has not played an important part. Only through extensive circulation has any widespread application of health knowledge been secured. Mass education has thus been a significant ally in helping to decrease sickness and mortality and so to raise the vitality and working efficiency of the population. Media which modern invention has made available for popular education have thus made a contribution to the maintenance of national life, which it would be impossible to estimate.

A decade ago (May, 1923), in his last public address, the late Dr. Hermann Michael Biggs suggested eleven objectives for practical present-day public health effort, five of which are largely dependent for realization upon measures of mass education.

- ¶ Establishing for every individual the custom of obtaining a periodic physical examination, made by a competent physician.
- ¶ Further reduction in the death rate from the common infective diseases, such as tuberculosis, diptheria, typhoid fever, scarlet fever, diarrheal diseases of infancy, and others.
- ¶ Through physical examination and instruction as to methods for retarding or arresting their progress, postponement of the age at which death occurs from the cardiovascular diseases and other diseases of later life.
- ¶ The prevention by education and law enforcement of new infections in the venereal diseases, and provision for more adequate treatment of syphilis.

¶ The extension of the educational work of the public health authorities as a most effective means of promoting the preservation of health and the prevention of disease.

While the inventive and engineering sciences have been evolving enormous facilities for the education of the masses, medical science has been discovering new knowledge whereby human sickness can be greatly lessened and the end of life postponed. Medical science and public health practice have eliminated any excuse for epidemics of such communicable diseases as typhoid fever, smallpox, scarlet fever and diphtheria. Yet diphtheria alone, among these preventable diseases, claimed in 1931 a needless toll of 5,738 lives in the United States registration area. While knowledge is available to prevent these deaths, in many so-called progressive communities it remains unapplied. And nowhere is it fully applied.[2]

In two certainties rest seemingly unlimited opportunities for continued fruitful effort in the popular dissemination of health education: first, the certainty that much sickness and many premature deaths could be prevented if knowledge which is at hand were universally circulated and applied; and second, the certainty that tools for the promulgation of this knowledge among the masses are available on a scale hitherto unprecedented.

Essential Steps in Mass Education

How should the mass educator go about his task in order intelligently to select from the countless channels available for the dissemination of knowledge those which will be most useful for a specific purpose? The preoccupations of the public and of individuals are many. The range of interests com-

[2] "Public Health in New York State," report of the New York State Health Commission, appointed by ex-Governor Franklin D. Roosevelt. Albany, New York State Department of Health, 1932, chapter xvii.

peting for attention is vast. The methods of communicating ideas offer a wide sweep of choice. Achievement is apt to be accidental, haphazard and over costly, if the proposed educational effort is not planned in the light of all of the steps fundamentally present. These may be indicated by a four-part question: (a) *What facts and ideas must be secured,* (b) *to transmit through what media,* (c) *to what audiences,* (d) *to accomplish what objectives?*

Whether the educator is conscious of them or not, these four considerations (objectives, audiences, materials or information, and media of communication) are present in any reasoned process of education. Accordingly, they are present in any intelligently conducted mass educational effort, at whatever phase or cross section of human life it is directed—whether it is international, national or sectional in scope, whether it is conducted in a neighborhood of a great city or in a rural community or whether it is intended for a group, a family or an individual.

Not only are they always present; these four factors are *always* interdependent. It seems axiomatic, therefore, that mass educational effort can be planned and pursued effectively and economically only when each of these factors is considered not only as a separate element in the educational process but in its relation to the other elements present.

Always complex and intricate, the task of mass education is simplified only when each of these four fundamental steps is broken down into the isolated individual tasks which it implies.

1. Objectives

In order of procedure, the first step in outlining any mass education program is to define clearly and concisely the objectives of the effort. What Edgar Sydenstricker has said elsewhere of public health work applies aptly here. "If a

clear definition of each objective were insisted upon before any public health activity were undertaken, we would be working along many lines with a degree of intelligence in perspective and direction that would be more nearly commensurate with our enthusiasm in effort. And, knowing exactly and specifically what we want to accomplish, our choice of method and devising of ways would be more precisely suited to the task. Certainly, if any definite measurement of results is to be attempted, it is absolutely necessary to have the objective definitely set forth; otherwise we shall not know whether the objective has been reached nor can we measure the extent to which it has been attained."[3]

When the objectives are expressed not only in terms of the ultimate ends which are to be obtained but also in terms of more practical intermediary objectives, the task is simplified. When the purposes of the educational effort are expressed in terms of particular activities, with first things put first and with specific indication of what presumably can be accomplished day by day, week by week, month by month and year by year, a "degree of intelligence in perspective" is implied which will assure "accomplishment without vague and wasted effort."

The first step, then, is not only clearly to express the ultimate purposes of the effort, but to break down these ultimate objectives into the "manifold and interrelated" intermediary objectives, major and minor, which are strategic points in progressing step by step, activity by activity, toward accomplishment of the ultimate objectives.

II. Audiences

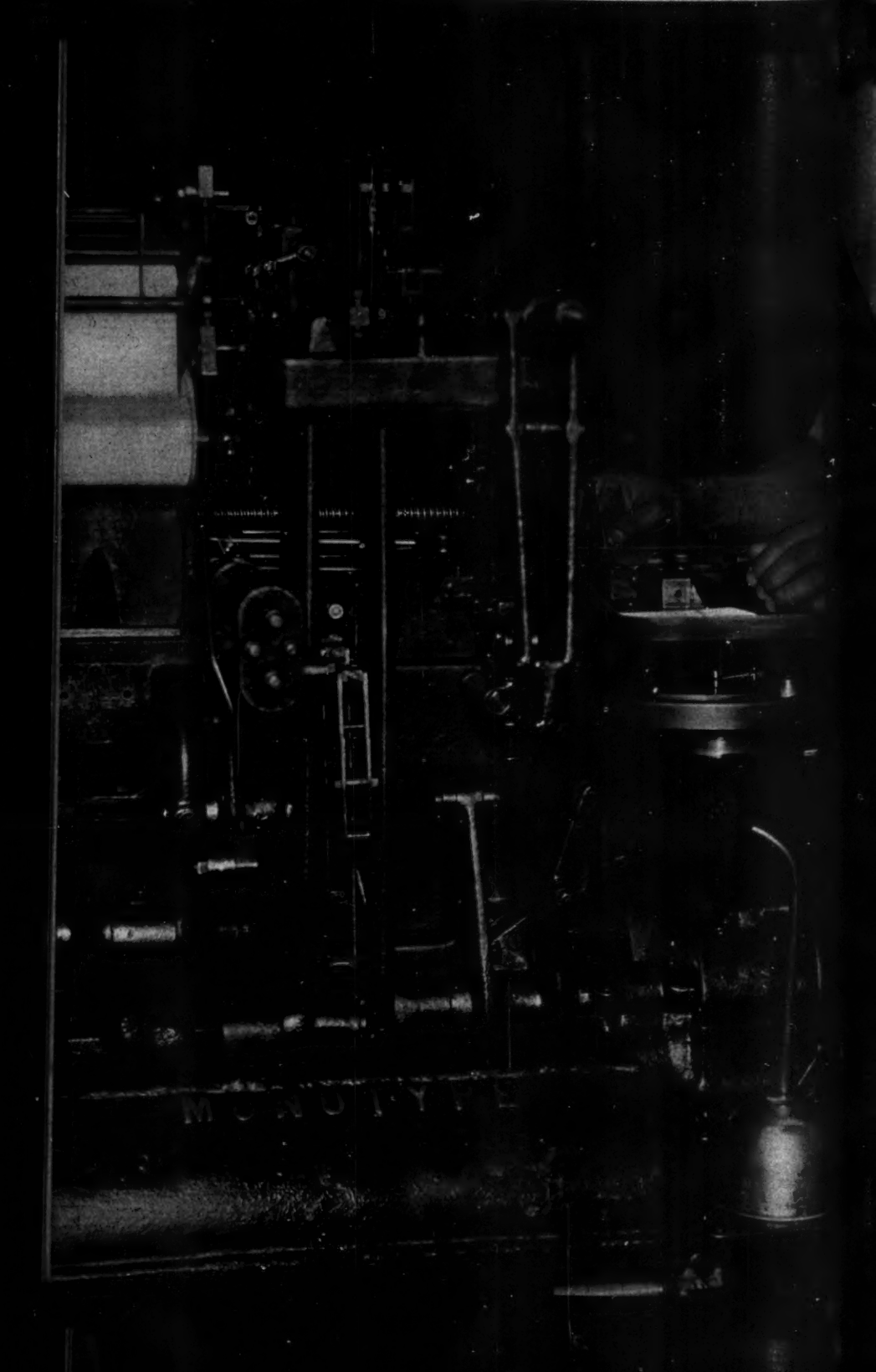
The accomplishment of any objective in mass education naturally depends upon influencing the mental attitudes and

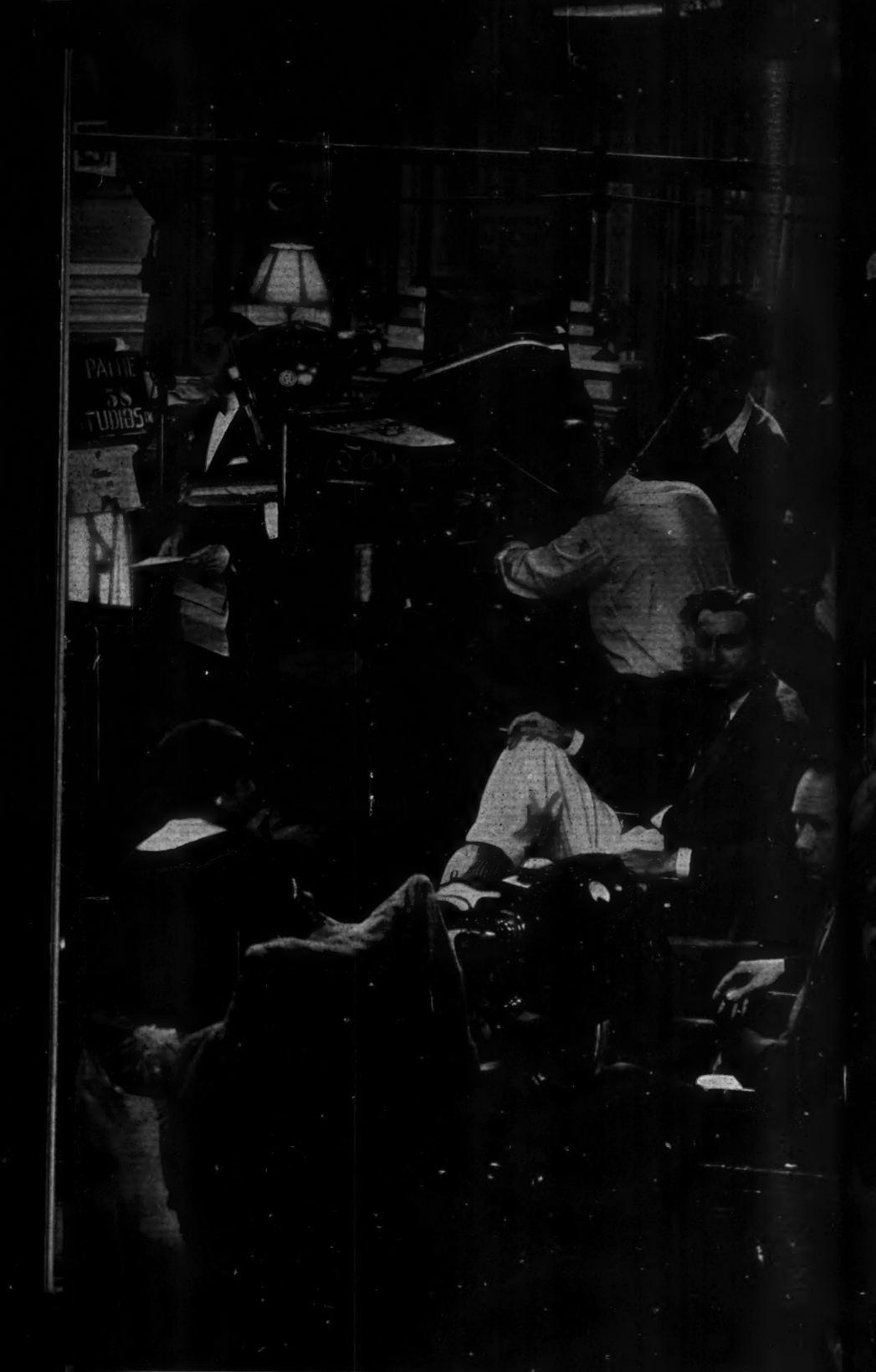
[3]Sydenstricker, Edgar: The Measurement of Results of Public Health Work. Milbank Memorial Fund *Annual Report*, 1926, chapter ii.

behavior of individuals—as separate entities and as members of families and groups. The second step, therefore, in outlining a mass education program is to determine as clearly and concisely as possible who the individuals are upon whose mental attitudes and behavior achievement of the proposed objective depends. Once chosen, these individuals compose the ideal potential audience for the intended mass educational effort.

Choice of such an audience would be difficult enough if one were limited to consideration of the comparative needs of different individuals for, and their possible receptivity to, information relating to the objective. But if the mass educational effort is to be economically and effectively pursued the prospective audience must necessarily be composed of individuals who are readily accessible through established channels of communication and who may be reached through social, political, business and other groups of which they are members. In each step of the analysis, however, people increasingly appear as individuals and in their relationships to other persons and as members of families; and the task of thus identifying them becomes increasingly simple. Thus, moreover, the all important human aspects of the mass educational process reveal themselves.

From the point of view of their accessibility through the available avenues of mass education and influence, individuals may be regarded merely as impressionable members of a mass or as members of existing occupational and social groups and classes. In rare instances they will be recognized as key persons who may be of special influence and assistance in helping to achieve the desired mass educational objective. When the inhabitants of a community are considered not only *en masse* but as members of groups and families and as individuals who have (or not) a definite bearing upon the


MONOTYPE


PATHE
STUDIOS

JOHN
WALTER

desired educational objective, much waste effort is obviated.

The individual in society "is neither the beginning nor the end but a link in the succession of life."[4] Because of the "general impulse of men to live together," the interests of the individual are identified with or merged in the larger interests of many groups with which he feels indissolubly bound. Through 'imitative cohesion,' men are prompted to conform blindly to the traditions, beliefs and ways of the group, to approve of things because they are accepted and to disapprove simply because they are not, to be moved by the slogans, the stereotypes, the conventions, the idols of the tribe. Because ideas and emotions can often be most effectively communicated to a person through the influence of individual leaders whom he respects and of social groups and classes with which he is associated, these constitute preferred audiences for any mass educational effort.

Mass impression, that intangible mental attitude of the masses commonly called public opinion, is spun out of the minds of individuals 'lost' within the great body of mankind. This spinning is a progressive process, and a cumulative one, and the patterns woven are incessantly changing. Deliberate propaganda, or purposive mass impression, if persistently enough promulgated through appropriate channels to well chosen audiences, passes into the stream of conversation in the normal intercourse of daily life and becomes part of an accepted pattern of public opinion.[5]

III. Information

The third step in outlining a mass education program should provide for the accumulation, preparation and pre-

[4]MacIver, R. M.: Society, Its Structure and Changes. New York, Ray Long and Richard R. Smith, Inc., 1931, p. 20 and ff.

[5]Willey, Malcolm M. and Rice, Stuart A.: Communication Agencies and Social Life. New York, McGraw-Hill Book Company, Inc., 1933, Part III.

sentation of such available information as it is believed will be useful in giving the proposed audiences a desired informed opinion. What will the prospective audience need to be told, and in what form, to secure its intelligent cooperation in achieving the desired objective?

Information constitutes the ammunition of the mass educational task. Success is dependent upon the authentic, convincing and persuasive quality of the information used. The steps in the educational process which Mark M. Jones has outlined as leading to action by the individual apply also to those that lead to action by individuals in the mass. He points out—

> ¶ that contacting an individual necessarily precedes any opportunity of informing him about an idea,
>
> ¶ that informing him precedes any possibility of interesting him,
>
> ¶ that upon his interest depends the individual's understanding of the idea,
>
> ¶ that his understanding of it necessarily precedes his reposing any enduring confidence in it, and
>
> ¶ that gaining an individual's confidence in an idea necessarily precedes securing his intelligent and enthusiastic cooperation in bringing it about.

Highly specialized are the tasks of assembling authentic information and of preparing and presenting it for publication so that when issued it will not only interest the individual and be clearly understood by him but will inspire his confidence and lead him to participate intelligently and enthusiastically in achieving a given purpose. These tasks call for the employment of many talents, trained skills and techniques. Because of the investments of money and of cooperative effort they involve, amateurism at any point may prove very costly.

However small their cost, the most expensive mass educational efforts are those which are unheard, unread and unseen. Too often publication is premature, before the material presented has been authenticated and put into a form which will not only engage the reader's attention and interest but be read and understood by him and gain his confidence and support.

Take, for example, the hypothetical case of Mr. Alan Blank, banker and leading citizen of Buckeye Falls. He is not accustomed to 'digging' for his information. He is used to getting it 'on a silver platter'—to having it meet him more than half way. His research faculties have been dulled by a continuous diet of books, magazines and newspapers—the contents of which must be 'full-baked' to have their media survive. He chooses to receive this 'predigested' literature and pays for it. He doesn't have enough time to read as much of it as he would like. When he receives gratuitously a body of information phrased in a writer's technical jargon, it is not surprising, therefore, that it fails to interest him. He fingers it, decides not to exercise the disciplinary concentration which a reading would require, lays it aside, forgets it and thus nullifies in so far as he and his influence are concerned the return on the investment of money and effort which have gone into it, from the initial research to the final mailing.

Mr. Blank's case is used to set forth the importance which the interpretation of information plays in the mass educational process. It should be a first principle that the thought and skill devoted to presenting information in a mass educational effort should be commensurate with the total amount of time and money invested in all of the several steps included in the process. The art of interpretation is one requiring its own specialized ability. The yield on the entire educa-

tional investment will be directly influenced by the skill of the interpreter in clearly and effectively setting forth to the intended audience information which has been accumulated because it was considered pertinent to the enlightenment of that audience.

There are three stages in the preparation of information for use in a mass education program—

¶ The accumulation of authentic data which it is believed will be germane and useful in giving the proposed audiences accurate information upon the subject at hand;

¶ Selection from the mass of available material such as may be useful in informing pertinent audiences and in influencing their mental attitudes and behavior; and subsequently the translation and presentation of that information into the vocabularies of these audiences; and

¶ Such rewriting, refinement, editing and polishing of this material as will make it most likely to attract the attention, engage the interest, be understood by, and secure the confidence and cooperation of, the proposed audiences, and as will make it available for transmission to them through the medium or media chosen for that purpose.

1. *Accumulation of authentic materials.* Much that has been taught and is being taught through the agencies of mass impression neither rests on any basis of scientific knowledge nor represents any extensive canvass of authoritative opinion. Health educators have been particularly gullible in their acceptance of health fads and half truths, particularly in much that has taught concerning personal hygiene.[6,7] It is doubtful whether any enduring gain is ever effected by the publication of unsubstantiated material or by the misrep-

[6]Armstrong, Donald B., M.D.: Health Facts—What to Tell. *American Journal of Public Health*, March, 1932, xxii, No. 3, p. 271.

[7]Winslow, C.-E. A., Dr. P. H.: The Facts—How to Decide What is to be Told. *American Journal of Public Health*, June, 1929, xix, No. 6, p. 647.

resentation of substantiated data. Such wasteful effort can perhaps best be avoided by recognition on the part of the mass educator of the limitation of his function in the educational process. He is primarily a translator, an interpreter, a popularizer of information and opinion. If he acquires proficiency in the knowledge and skills required in the practice of his profession, and if he efficiently and economically employs its principles and techniques to a degree approaching adequacy to the opportunity which confronts him, he will need to obtain his subject matter from other specialists whose primary concern is fact-finding and the diagnosis and prognosis of problems in the field of his mass educational effort. Only thus can he feel assured that his educational materials have sufficient authoritative bases of fact and opinion to warrant their dissemination. But while asking and waiting for additional demonstrated or authoritatively recommended facts, which might be expressed in forms which would be readily comprehended by any normal child, mass educators can well utilize the vast present-day resources of communication in the further interpretation of knowledge long since fully tested and unanimously recommended.

"The conquest of nature, while not complete, has for the first time in history become sufficient to supply all men's needs," Sir James Arthur Salter, former director of the economic and finance section of the League of Nations, recently said before the Conference of Universities. "I do not advocate cessation of scientific research or technical training," he continued, "but the proper use of the gifts of science is now more important then their increase."

2. *Assortment and presentation of information.* Because the the mayor of an eastern city complained that he had been misquoted upon an earlier occasion, a reporter following a subsequent press conference took meticulous pains to quote

him verbatim. The resultant statement published as coming from the official well illustrates the need for the last stages mentioned above in the preparation of material for publication:

> "Briefly, I may omit some minor points that I referred to this morning, but briefly, there was a discussion about the holders of the stock, the position of the stock with relation to the bonds, the future of the stocks, as to its value, the probable effects upon the stock by the disaffirming of the lease. A number of people—the holdings represented by the committee, about 11 or 12 per cent, I mean by this committee. The desirability of getting in a much increased number of security holders. This is on the part of the committee, so that the views of a larger group might be learned.
>
> "And the history of the stock and the trend from time to time. They show the same disposition, in other words, a spirit of willingness to cooperate, a willingness to meet the city's views and the city's interest. How far that will go of course will develop as we go along."

Only in heaven will publishable manuscripts flow uniformly from tongues and pens. "The rule of clearness," states Christopher Morley, "is not to write so that the reader can understand, but so that he cannot possibly misunderstand."

If information is to be presented so that it will be unmistakably clear to the masses, it must be phrased in language which will be readily understood by them. Publications can justify their existence only by being read. Technical language should be tabooed—though not at the expense of accuracy. Writing may be popular in a finer sense of the word. Information can be made available to much wider audiences if words and expressions which can be generally understood are substituted for technical phraseology.

It has been said that it is a common mistake of technical minds to assume that certain facts necessary to the under-

standing of their subject, because familiar to them, are obvious to everyone; and that this factor, perhaps greater than any other, has been responsible for the tardy application by mankind of the knowledge acquired by the more learned.

Why use forbidding technical phraseology knowing in advance that it will curtail the circle of readers? Where, if not here, is the place to demonstrate that a subject can be presented "intelligently and authoritatively without the use of heavy technical weapons so often brandished merely to impress the reader," rather than to inform him?

The rank and file will always be mystified by that which they do not understand. But increasingly laymen are refusing to be confused by strange words and signs and are suspicious of that person's grasp of any subject upon which he is unable to write or talk so clearly that he cannot possibly be misunderstood.

3. *'Englishing,' editing and publishing.* Commercial publishers could not survive by publishing manuscripts in an unfinished stage. A finishing touch may often give point and value to an otherwise ineffectual effort. The Buffalo Museum of Science found in a recent observation that people actually spent more time before exhibit cases when the amount of material in the cases was lessened. It is better to get one hundred words 'over' to a reader than to get none—by attempting a thousand.

It is easy to forget *why* printed matter is issued. Its purpose always is to carry ideas from one individual or group to another. If it fails of a reading, it is totally ineffectual, wasteful and expensive, however small the printer's bill. When judged from the point of view of their economy and effectiveness in accomplishing the purposes for which they are intended, volumes that are a pleasure to the hand and

eye and a credit to the desk cost no more than, if as much as, books that are carelessly manufactured.

IV. Media of Communication

The fourth step in outlining a mass education program is that of choosing from the manifold channels available the media which can be employed most economically and effectively to communicate information to the audiences which have been selected because they are composed of individuals upon whose intelligent cooperation achievement of the desired educational objective depends. Obviously, a primary principle determining the choice of a medium is not only the comparative economy of its use, but its probable effectiveness in achieving the purpose for which it is to be used. In the choice of the right media for dispatch of the right message to the right individuals lies the way toward effectiveness in mass education with least expenditure of money and effort.

The mass educator is offered an elaborate range of choice in the media which he will utilize in the transfer of ideas and purposive impressions to individuals and groups. Economy in the use of media naturally indicates that selection should be made so far as possible according to the geographical range of residence of the prospective audience. All things being equal, the more direct and personal the approach the better are the chances of engaging attention and interest leading to understanding, confidence and support; although naturally, the more costly will be the effort. The media available for mass education afford a high degree of selectivity both in geographical range and in intimacy and directness of personal contact with individuals. A wide compass is thus afforded for the exercise of specialized knowledge and skill in their choice and use. The task of choosing is simplified when the available media are considered with regard to the

degree of selectivity which they afford in reaching individuals according to where they live, what they see, hear and read, who they are, what they do, and what their status is with reference to the proposed educational objective.

In an accompanying outline is presented a check list of available communication media arranged according to the comparative intimacy and directness which they afford in contacting individuals as individuals, and as members of a mass and of various social groups and classes. All the channels listed are available in some communities, particularly in the larger cities; and many of them are available in all so-called civilized communities.

Any program of mass education which relied upon direct contact with individuals would obviously seem foredoomed. It would assume a mediaeval state of civilization, when the sum of the qualities of a man's individual and social knowledge was limited by the influence upon him and the knowledge imparted to him by those with whom he more or less accidentally came into contact. Even if practicable, personal contact may not offer the best means for those who know to communicate information to those who do not know. Possession of knowledge does not *ipso facto* qualify one to dispense it. The job might be much better done by one who has access to his audience only through less personal and direct channels. It is a rare individual who would trade knowledge derived from a favorite book for that acquired through personal contact with any teacher.

The telephone, a medium of direct contact which, pending the development of television, offers the closest approximation to face-to-face conversation, "has advantages of flexibility which give it preeminence where a quick 'two-way' interchange is desired."[8] First class mail, telegraph, cable and

[8]Willey and Rice: *op. cit.*, p. 148.

MEDIA OF COMMUNICATION AVAILABLE FOR USE IN MASS EDUCATION

Allowing Selectivity according to What Individuals Read, What They See, Where They Live, What They Do, and Who They Are

ESTABLISHED CHANNELS OF COMMUNICATION (PRINTED WORD, SPOKEN WORD, PICTURES)			SOCIAL ORGANIZATIONS (SOCIAL GROUPS AS MEDIA)	INDIVIDUALS (MEN AS MEDIA)
MEDIA ALLOWING ONLY ACCIDENTAL SELECTIVITY	**MEDIA ALLOWING PRACTICAL DEGREE OF SELECTIVITY**	**MEDIA ALLOWING COMPLETE SELECTIVITY**	**SOCIAL GROUPS READILY AVAILABLE FOR USE AS MEDIA**	**KEY AND GIFTED INDIVIDUALS WHOSE CO-OPERATION IS ESPECIALLY USEFUL**
in communicating thoughts and emotions to individuals upon whose mental attitudes and behavior, achievement of the intermediary and ultimate objectives depends.	in communicating thoughts and emotions to individuals upon whose mental attitudes and behavior, achievement of the intermediary and ultimate objectives depends.	in communicating thoughts and emotions to individuals upon whose mental attitudes and behavior, achievement of the intermediary and ultimate objectives depends.	in communicating thoughts and emotions to individuals upon whose mental attitudes and behavior, achievement of the intermediary and ultimate objectives depends, for example:	in communicating thoughts and emotions to individuals upon whose mental attitudes and behavior, achievement of the intermediary and ultimate objectives depends.
NEWSPAPERS MOTION PICTURES RADIO GENERAL MAGAZINES	IMPERSONAL MAIL PAMPHLETS ENCLOSURES THE PLATFORM DRAMATIZATION EXHIBITS PERIODICALS	PERSONAL CONTACT PERSONAL MAIL TELEPHONE TELEGRAPH CABLE WIRELESS	PUBLIC OFFICES AND DEPARTMENTS EDUCATIONAL INSTITUTIONS PROFESSIONAL GROUPS CIVIC ORGANIZATIONS SOCIAL AGENCIES INDUSTRIAL AND LABOR ORGANIZATIONS ETC.	PUBLIC OFFICIALS INDUSTRIAL LEADERS SPECIAL TALENT

Bertrand Brown and Madeline R. Barry

wireless constitute direct and exclusive though less intimate channels of communication between individuals. Publications and other printed matter which can be dispatched as second or third class or 'bulk' mail, while less costly in communicating ideas to large groups, are also less exclusive and less personal than the foregoing. Newspapers and magazines of large general circulation, theatrical motion pictures and radio, all of them economical and effectual mass educational media, allow only accidental selectivity in communicating ideas and images to pertinent individuals and groups.

There are, of course, many considerations which will determine the effectiveness and economy of using any particular medium for a given purpose. Booklets, pamphlets and other reading matter, to use one example, may not be effective with a proposed type of audience. Not all people can read. Not all people who can read do so. Those who do read often have firmly fixed reading habits. In their leisure many men and women sit doing nothing. Their hands, their eyes, their brains are often idle. They do not even read a newspaper—one of the most adaptable common carriers of information available to the mass educator. It is for this reason, among others, that radio broadcasting has demonstrated itself as a valuable medium for oral mass education. That it offers vast unexploited opportunities is indicated by responses which a clergyman received from more than 485,000 letter writers following one broadcast in 1930 over a network of twelve stations of the Columbia Broadcasting System.[9]

To use one other example, the talking picture, adaptable for presenting visual and oral instruction simultaneously, must necessarily play an important part in modern mass education. Through this medium of transmitting moving images with synchronized sound, it is possible to present be-

[9]Willey and Rice: *op. cit.*, p. 203.

fore any audience at any time a speaker of recognized histrionic power in public expression. Photography of microscopic subject matter in motion has made it possible to display to 5,000 persons simultaneously what yesterday was visible to only one person leaning over a microscope. The synchronization of sound with animated drawings has further extended the usefulness of this medium for mass instruction.

The availability of individual leaders and of social groups as media for the communication of ideas and emotions has been mentioned (p. 177). Irrespective of the cause initially leading the individual into common interest with a group, once he is aware of such mutuality, his acceptance of a new idea becomes somewhat dependent upon the group's sanction of it. Indeed, if reluctant to accept a new concept, he is often brought to do so through the 'social coercion' which is inherent in all social organization.[10] Numbers give strength. The presence of others supports the interest of each, opening the way to better mutual understanding. Through mass influence, individual confidence is engendered and enthusiastic cooperation often gained. In this sense, it may be said that it is the purpose of mass education to transform unorganized aggregates of human beings into groups which are like minded with respect to the basic subject matter of the effort. Individual leaders and social organizations, framework of the structure of society, are thus ideal potential audiences for any mass educational effort. This is because they constitute a medium *par excellence* for the communication of ideas and emotions to their followers.

A criterion of success in mass education is the extent to which it develops in its proposed audiences understanding, emotional reactions and habit patterns which conform to the

[10]MacIver, R. M.: *op. cit.*, p. 100 and ff.

purposes of the effort. Measurement of change in the mental attitudes and behavior of one individual is difficult enough; the difficulties of measuring such changes in groups of the population are obvious unless the result sought is definite action like the casting of a ballot or the purchase of a commodity. There is need for more authoritative information upon which to base judgment of the probable effectiveness and economy of various methods and procedures available for use in mass education. Experimentation with various processes and media has not been recorded very extensively and thus made part of the available working knowledge. Here is a fruitful field for controlled experiment, for the use of available means of measuring the results of purposive social action. In the absence of records of such exploration and the fixing of principles based upon such factual data, procedure must necessarily rest upon collective experience.

An attempt has been made here to indicate in sketchy fashion what, based upon such experience, seems a sound approach in the formulation and carrying out of a mass education program. The steps fundamentally present have been indicated by a four-part question: (a) *What facts and ideas must be secured,* (b) *to transmit through what media,* (c) *to what audiences,* (d) *to accomplish what objectives?* Here are outlined the essential steps which, consciously or not, are taken in the spreading of mass information. These are the steps which necessarily would be taken in mobilizing the resources available for concerted effort in carrying out any well considered mass educational objective.

The foregoing suggests that the attitudes and behavior of masses of human beings can be influenced and motivated for social ends through the utilization of the means which modern industry has made available for the widespread dissemination of ideas, images and emotions. Spectacular demonstra-

tions have been made in the last decade and a half of the power of concerted propaganda in influencing the trends of the world. Programs which yesterday existed only in the minds of pamphleteers and orators today affect the lives of millions. Propagated ideas, not ammunition, enthroned Sovietism in Russia, Fascism in Italy. Whatever one may think of the political philosophies by which these governments are motivated, no clearer manifestation is needed of the power of mass education to influence the actions of mankind than to witness the economic and social upheavals brought about in these and other countries through the purposive employment by their leaders of the tools of mass impression.

"You," said Demosthenes to his rival orator Æschines, "make them say, 'How well he speaks.' I make them say, 'Let us march against Philip.' "

Masterful use of modern instrumentalities of mass education is indispensable in securing mass action. Any group whose program requires social action, which has not become aware of the important part mass impression must play in the accomplishment of its purpose, has not adequately qualified itself for leadership in its field.

Thomas Carlyle has encouraging words for the mass educator: "Hast thou not a Brain, furnished, furnishable with some glimmerings of Light; and three fingers to hold a pen withal? Never since Aaron's Rod went out of practice, or even before it, was there such a wonder-working Tool: greater than all recorded miracles have been performed by Pens."

INTERPRETING MEDICINE TO THE PUBLIC

by IAGO GALDSTON, M. D.

WHEN one of the few remaining absolute monarchs comes to America to have one of our surgeons operate upon him, there is created a news situation of major magnitude. The fact that the potentate is English-bred and English-trained makes his choice of an American surgeon more provocative. The people at large and the medical profession are naturally prompted to ask a multitude of questions. Curiosity and interest having been aroused to a high pitch, nothing but the most detailed discussion of the nature of the malady, the operation, its technical phases, and the human interest aspects of the panorama will suffice.

When an announcement is made in the press that on the West Coast two scientists have discovered a glandular extract which allegedly has yielded exceptionally good results in the treatment of cancer, the entire country is electrified with hope, expectation, and eagerness to know more. When subsequently, it is proposed to establish in New York City a so-called clinic for the demonstration of this wonder-working serum, now substantially discredited by careful tests, a serious communal situation is created with more than news implications.

When a newspaper is offered an attractive advertising contact of quasi-medical nature and it desires at one and the same time to accept the advertisment and yet not to do violence to its own ethical code, nor to offend the medical profession, such a newspaper is sorely in need of counsel and support from the medical profession.

These random, but representative situations taken from

the large experience of the Medical Information Bureau, illustrate the type of problem which it faces and which have created a living need for its service. The Medical Information Bureau was organized in 1928. In 1930, it was taken over by the New York Academy of Medicine. Since that time, the Milbank Memorial Fund has made annual appropriations toward the support of the Bureau.

The credo of the Medical Information Bureau was, at its foundation, set down in the following terms:

"From its earliest days the profession of medicine has been governed by a code of ethics which has served to maintain the lofty ideals of the followers of Aesculapius. Unhappily, this code has also served to insulate the profession against intimate contact with the public.

"Whatever may have been the forces and motives that moved the early lawmakers of medicine to instill an element of secrecy and aloofness into the governing principles of the profession, certain it is that the best interests of the physician and of the public are no longer served by this attitude. The recent and phenomenal progress of modern medicine, and particularly of preventive medicine, necessitates the development of a direct and intimate channel of communication between the practitioner and the community. This is essential, not only that the public may learn to take advantage of the constant advances of modern medicine, but to the end that it may be protected against the hordes of charlatans, quacks, and misguided zealots who, strange to say, thrive more than ever in this day of presumptive enlightenment.

"In appreciation of the needs of our day and society, the New York Academy of Medicine and the Medical Society of the County of New York have established a joint Medical Information Bureau. The aims of this Bureau are to facili-

tate the dissemination of authentic medical information on medical and public health matters, to stem and curtail quackery and to promote a better understanding between the public and organized medicine."

These objectives are largely achieved through an organization which is simple in its structure and inclusive in its capacities.

Behind the Medical Information Bureau there is a body of expert opinion gathered from a group of consultants numbering approximately one hundred. These consultants are divided into specialty sub-groups, including all of the specialist branches of medicine. The consultants were selected and appointed by the Academy of Medicine and the Medical Society of the County of New York.

Consultation with the Bureau advisers may be of an individual or group nature and may take place over the telephone, by correspondence, or in conference. A simple telephone inquiry of a 'spot news' nature received, say from a newspaper, may be answered within the space of ten to fifteen minutes. The inquiry is merely referred, again by telephone, to one of the appropriate consultants and his reply is then transmitted by the Bureau to the inquiring newspaper.

Where a consensus of opinion is required the inquiry may be addressed by letter to a number of consultants and the prevailing judgment is thus secured.

When the matter at issue is of an involved nature, it may be necessary to bring the consultants together for a joint meeting. At times such a conference may include the inquirer or his representatives.

Experience has shown that the vast majority of inquiries received by the Medical Information Bureau can be handled over the telephone with a minimum imposition upon the consultants. Next in order stand the consultations conducted

by correspondence. Group conferences with consultants are only rarely required.

The consultants of the Medical Information Bureau are appointed from year to year. Practically all of the original members of this advisory group have served the Bureau throughout the five years of its existence. None of them has found occasion to complain of the burdensomeness of his task.

Since its organization the Bureau has handled approximately 8,000 inquiries.

When the Bureau was founded appropriate announcement of its creation was made through the press. The response from the newspapers was immediately forthcoming. However, in the early months of its existence, it was necessary to call to the attention of a variety of agencies the Bureau's proferred services.

Personal interviews with a number of editors of daily, weekly and monthly publications served to acquaint them with some of the personnel and most of the objectives of the Bureau. Their suspicions as to the possible exercise of censorship by the Bureau were in this wise allayed.

The number of inquiries received by the Medical Information Bureau has increased steadily. Not only have the different agencies sustainingly addressed themselves to the Bureau but their number has multiplied from year to year.

The Medical Information Bureau is operated by a full-time staff consisting of an executive secretary, an assistant and a secretary. The policies of the Bureau are determined by an Executive Board appointed by the Council of the New York Academy of Medicine and by the Comitia Minora of the Medical Society of the County of New York. This Executive Committee meets monthly at the call of the chairman. Moot questions and new points of issue are presented to the Executive Committee for decision. A set of principles

governing the relation of the physician to the press, et cetera, have been formulated and published.

In its credo, the objectives of the Medical Information Bureau are defined as follows: (1) "to facilitate the dissemination of authentic information on medical and public health matters, (2) to stem and curtail quackery, and (3) to promote a better understanding between the public and organized medicine."

The first of these objectives, the dissemination of authentic information, has an active and a passive phase. Through the Associated Press the Medical Information Bureau issues a daily health article which is published in approximately 400 newspapers throughout the United States. These daily articles are rather unique in character. They do not represent the opinions or judgments of an individual, but rather the harvest of medical knowledge and practice. They are issued as of the Academy of Medicine. They contain basic information on personal hygiene, physiology, and disease prevention. They are not meant to teach the reader self-diagnosis or self-treatment. Correspondence from readers is not invited. Questions on self-diagnosis or treatment are not answered. When inquiries of this nature are received, the correspondent is advised to consult his personal physician or, if unable to afford one, to apply to the nearest hospital or dispensary.

It is interesting to note that many physicians are among the readers of this health column as is witnessed by letters received from them asking for medical references pertaining to certain of the items which they read.

From time to time there are released to the press of the country properly prepared abstracts on medical addresses presented at the stated or other meetings of the Academy and of the Medical Society of the County of New York. These scientific presentations are, so to say, predigested,

simplified, and rendered in a language intelligible to the lay reader. Such papers may vary in nature and scope from recently developed ideas on the treatment of pernicious anemia or the prevention of dental caries to matters of a public health and communal nature.

The Bureau has served both the Academy of Medicine and the Medical Society of the County of New York in presenting to the public the addresses of their officers, particularly when these have dealt with the relationship of medicine to the public. In this wise, the Bureau has contributed to the third of its objectives, namely, the promotion of a better understanding between the public and organized medicine.

The Medical Information Bureau assists newspapers and a variety of other periodicals in what is termed feature writing. Thus, a woman editor, desiring to conduct a one-man campaign against recurrent and exaggerated ideas on the hazards and hardships of motherhood, is helped in securing essential information on obstetrics and gynecology upon which she can build her journalistic creations.

An ambitious journalist, desiring to publish the known facts on common cold, is helped in wading through the mass of available literature, and in securing more illuminating interviews with certain of the scientists who have devoted much labor to this perplexing problem.

No less important is the inactive or passive phase of the dissemination of authentic information. From time to time newspapers receive sensational reports of alleged marvelous discoveries of cures or remedies for a variety of diseases. These reports may emanate from any part of the globe, most frequently from abroad. Newspaper editors are not in position to evaluate these announcements. They will therefore consult the Bureau to check both on the source of the announcement and its probable authenticity. It is pertinent

to note that the Bureau has never insisted on the suppression of reports of questionable discoveries. News is news, even though it may emanate from Baron Munchaussen. The evil effect, however, is mitigated by having subjoined to the story a statement that, according to the Medical Information Bureau the above announcement is not established, not demonstrated, unknown, questionable, or highly improbable.

A number of newspapers have even seen fit to include such qualifying warnings in the sub-title or sub-heading.

The second of its three major objectives, namely, to stem and curtail quackery, the Bureau strives to achieve by indirect methods. Quackery is so thoroughly well organized, is so widespread, and is so devious in its procedures, that a frontal attack, to be effective, would require all the resources of federal, state, and local government. Furthermore, quackery only thrives as long as, and to the extent that there is available a gullible and credulous public, willing to be fooled.

It is in the nature of man to revel in the amazing, in the extraordinary. The glib charlatan, the prestidigitator, the facile scoundrel, will always have his audience, whether he mounts the tailboard of his caravan or the legislator's rostrum. And he will sell his tinsel wares to a number until time makes all men wise.

One might expect that as the frontiers of science are pushed forward, there would follow as a consequence a recession of ignorance and quackery. But experience teaches us that such expectations are merely wished-for ends and not necessarily consequential results. There was a time when the quack and the minstrel were inseparable. The oil torch flickered its smoky yellow light, the burnt cork comedian strummed his banjo, and the maestro with waxed mustachios and patent leather boots regaled a gathering of yokels with a spiel on rattlesnake oil.

Today, however, quackery has gone modern. The quack uses technical terms with which to dazzle and mislead his gullible public. The man in the street lacks the code necessary to distinguish the genuine from the spurious. If viosterol can take the place of cod-liver oil and sunlight, why not irradiated massage cream? If radio is a fact and fever can be induced by electrical apparatus, why not, too, Abram's electronics? The newspaper-reading and the radio-listening public swallows the latest discoveries on cancer, psychoses, or arthritis with its breakfast. And how shall it know better? It cannot evaluate the subtle differences in the various fields of achievement. It does not appreciate that when Langley flew his flying boat and the Wrights their airplane, flying was incontrovertibly an established achievement, while when Koch announced that tuberculin cured tuberculosis, it required several years to demonstrate his error.

Quackery must therefore be fought with knowledge—knowledge in a fitting form. The man in the street must, so to say, be taken behind the scenes and shown the ways of science. Its meaning, its elements, its methods, and procedures must be interpreted to him.

It is in this fashion that the Medical Information Bureau attacks quackery. Through the press and through the radio it carries on a persistent campaign of education, not merely to 'sell' the doctor to the public, but to acquaint the public with science as it relates to health. Persistent use is made of the radio. An Academy hour is conducted over the network of the Columbia Broadcasting System. This network extends over the entire country. In addition, a number of the City's local and network stations are used for the dissemination of medical information. All the radio talks given through the Medical Information Bureau are carefully scrutinized. Programs are arranged to suit particular audiences and an effort

is made to render the radio addresses seasonal in nature and appealing.

In this field, the Medical Information Bureau serves practically all the health and social welfare agencies of Greater New York. The Medical Information Bureau secures time for the radio stations and apportions it to the various organizations for radio addresses or other types of programs devoted to their special field of interest. Of necessity, therefore, the radio program of the Bureau deals not only with strictly medical subjects, but also with public health and communal health problems.

The Medical Information Bureau also renders a service to the radio stations by advising them on commercial programs. The standing and acceptability of commercial products with a health element, their radio continuity and similar problems, are reviewed for the radio stations at their request. This relationship is, of course, only advisory. The Bureau does not exercise any censorship over the air.

The public at large, too, has learned to make use of the Bureau and addresses to it a variety of inquiries. The nature of these inquiries is multiform. The request may be for the name of a general practitioner or a specialist, for the standing of a certain institution, et cetera, et cetera. Not a few bring to the Academy cures of various natures. The Bureau, of course, receives many questions from the public, to which no answer can be or is made.

Lastly, the Bureau is used by the medical profession in a variety of ways. Manuscripts prepared for publication in the lay press are submitted for review. Interviews with the press on current medical subjects are arranged through the Bureau. Problems relative to 'ethical' procedures are frequently addressed to the Bureau for its counsel and judgment. Hospitals also refer to the Bureau certain problems

arising out of their relationship with the press and public.

The Medical Information Bureau has found ample justification for its existence in the services which it has been enabled to render. But beyond this rather solid justification there is another one which is rooted in what might be called social philosophy. The systemic biologists and sociologists that flourished in the second Renaissance of the last century, were fond of comparing society to a highly organized and highly integrated living entity. Fascinated by the analogy between society and the living organism, they compared with a good deal of warrant certain social functional groups with homologous functional systems in the animal organism. The nervous system of the animal economy they compared to the so-termed intellectual group of the social organism.

There is an appealing fittingness in this analogy. Modern society is so complicated and so specialized, that for the integration of the whole it is imperative that certain groups of men dedicate themselves to the function of informing the rest of the social cells concerning what is going on in the world. In this sense the Medical Information Bureau is a part of and is contributing to the functions of what might be called the nervous system of society. If it were not for the bizarreness of the expression, the Information Bureau might well be called the intelligence service of the medical profession, comparing it in a sense with the intelligence service of the army.

That this view of the Medical Information Bureau is not entirely fanciful is attested to by the fact that many medical associations throughout the country have shown a marked interest in the Bureau and some have established similar organizations. More than that, in the City of New York, the legal profession has followed suit and has also created an Information Bureau.

A PROJECT IN RURAL SCHOOL HEALTH EDUCATION[1]

INITIATING THE STUDY

by RUTH E. GROUT

FOR nearly a century there has been a continual volley of opposition by many educators against the small rural school. They have considered it an institution that is inadequate to meet the requirements of modern living and have been prone to lay it on the shelf to accumulate the dust of neglect. A national movement to consolidate these schools gradually has decreased the number of children in them to approximately one-fifth of the total school enrollment, yet in 1930, according to a statement recently released by the Federal Office of Education, 60 per cent of the school buildings in use in the United States still were of the single-room type. In New York State 66 per cent of the schools were of this kind.

During the past few years active efforts to centralize these many scattered schools have been carried on by the State of New York. The State Education Department, however, has appreciated its responsibilities to the 7,000 and more small rural schools not yet centralized, and has started a progressive program of education which is permeating even the most remote schools of the State.

The problem of health education in these thousands of one- and two-teacher schools is recognized as an important but a most difficult one. The schools themselves are scattered and many are not easily accessible for supervision. The active support of the teachers, who alone are in a position to see the children under their care as complete human entities,

[1]From the Cattaraugus Supervisory School Hygiene District and the Division of Public Health Activities, Milbank Memorial Fund. Miss Grout is director of the health education study in Cattaraugus County. This is the first of a series of papers on this experiment in school health education.

is difficult to obtain. The rural teacher, in general, has been inadequately trained and her term of teaching in a given school usually has been short. After 1934, however, each new teacher entering the school system will be required to have three years of normal-school training. The stability of her term of office in the future is still unpredictable, but it is probable that for some years to come the system will lack both unity and continuity. Even in a county such as Cattaraugus, where a fairly well-rounded and efficient health program has been in operation for some time, Professor Winslow in his survey of the County health program in 1930 pointed out that the most serious lack in the whole field of school health was "the absence of a modern coherent program of health education in the schools."[2]

In realization of this situation a special school health education project was begun in the County in the fall of 1931, with the assistance of the Milbank Memorial Fund, upon appeals from the district school superintendents and the Health Department. The purpose was to establish in a rural school district an experimental program of modern health education which would be in harmony with the goals of progressive education sponsored by the State Education Department and sufficiently flexible to meet the needs of the individual schools. To organize the program, a full-time director was appointed by the Supervisory School Hygiene District, a board including the five district school superintendents and the County commissioner of health. Since there are considerably over two hundred one- and two-teacher schools in the County, it seemed fitting in the light of the program of the State Education Department, to focus the experimental health education project on the smaller schools.

[2]Winslow, C.-E. A., Dr. P. H.: Health on the Farm and in the Village. New York, The MacMillan Company, 1931, p. 167.

Previous to 1931, health education was not an untried field in Cattaraugus County. Here as elsewhere it had passed through various phases. The Gold Star Project, a device for standardizing health accomplishments had been tried and discontinued. The county public health nurses had appreciated and applied the educational aspects of their routine health services which centered around disease prevention, defect corrections, and improved school sanitation. For over a year monthly bulletins on various health topics had been sent out to the teachers by the supervisor of school nursing. The district superintendents in conjunction with the County Department of Health had been active in utilizing available State funds toward correcting the most blatant sanitary deficiencies, a project in itself educational. An effective diphtheria-prevention campaign had sensitized the County to the value of preventive measures, but in all of this there had been very little active participation by the teachers.

Certain policies have influenced the formulation and execution of the projected school health education program. These may be stated briefly as follows:

1. To be successful, a school health education program should grow out of classroom situations and come from the teachers themselves.
2. Activities and materials of health teaching should be based on the children's interests and needs in their own environment.
3. Each child should be stimulated to practice healthful living throughout the school day.
4. Provision should be made for giving each child a basic understanding of the reasons for desirable health behavior.
5. Health teaching should be integrated with the every day life of the child and all available resources should be drawn into action to accomplish this unification.
6. The program should identify itself with community programs of health and education.

7. Only scientifically sound facts of hygiene and health practice should be taught.

As a first step in the Cattaraugus project, a teachers' committee was formed to take active leadership in organizing a unified program. The fifteen members of this committee were chosen from the County at large with the aid of the district superintendents, and were selected for their ability to approach a curriculum-construction program with an experimental attitude. To this task they have given ready support both through committee participation and classroom experimentation.

At the beginning each of these teachers was asked to express what she considered the outstanding needs of her school. The problems were as diversified as the number of schools themselves. Among those mentioned most frequently were safety, use of leisure time, provision for play activities, improving handwashing and drinking facilities, ventilation, and nutrition. A later and more extensive, although less selective study of teacher-felt needs, revealed in addition such perennial problems as better toilets, personal cleanliness, posture, dental attention, hot lunches, and scales for schools. There appeared to be but slight recognition of such obvious needs as improved school lighting, parent education, and better home environment, although these were on the list submitted to each teacher.

In the light of this preliminary survey it was decided to use as the general theme of the first meetings of the committee the formulation of certain standards for a healthful school environment, at the same time giving consideration to teaching activities which would broaden an understanding of the pupils' relations to the environment. For example, when problems of water supplies were discussed, suggestive teaching projects on water were also presented. These pro-

jects stressed such aspects as the relation of water to all living things, water supplies in the community, and the like.

The committee met regularly in a central place during the first year. The teachers themselves acted as chairmen of these meetings and took active part in planning the programs. Among those who met informally with the committee were the director of the School Health Service, the County commissioner of health, the County sanitary engineer, the supervisor of school nursing, and the State supervisor of health teaching. The district superintendents, five in number, gave active support by regular attendance and participation in discussions.

After several meetings it was evident that a group of fifteen teachers drawn from a territory of 1,343 square miles was unwieldy as a functioning body. The teachers themselves were demanding more opportunity for deliberative thought in smaller groups. So the original large committee was split into three sectional groups to concentrate on specific phases of the program. One section took as its responsibility the evaluation of health books and the setting up of certain simple criteria for judging them. This study helped to build up a consciousness of variations in material. Another section concentrated on organizing an experimental teaching unit which incorporated a variety of classroom activities suggested by members of the larger committee. To the third section fell the task of compiling a questionnaire survey for teacher and pupil use which was called "The School Health Study." The purpose of this survey was to help teachers and pupils to find their own school health problems and to provide a record which might lend more continuity in each school from year to year.

A group of nine schools was selected during the early months of the project for purposes of experimentation. The

schools in this experimental area are located in four townships within easy access to Olean and present a fair cross-section of the schools of the County. Through regular visits to the schools and occasional meetings of the teachers, a program of supervision in health education has been developed. The teachers are gradually growing in their appreciation of health values and are assuming more and more responsibility for carrying out effective health programs. Tangible results of their efforts are already in evidence.

A tentative list of health objectives was prepared at the end of the first year to serve as a guide for the teachers of the committee and in the experimental area. One of the functions of the members of the committee this year has been to analyze critically these objectives in the light of their own specific situations. Revisions will be made as general agreements can be reached, with the hope that the end result will be an outgrowth of classroom experience rather than a product of academic supposition.

An ultimate goal is to shape some form of comprehensive guide, to be published with illustrative material, which may pave the way for more productive activities on the part of other teachers in the County. As a basis for this guide, which is evolving from actual classroom experience, the teachers of both the teachers' committee and the experimental area have kept notes of all health teaching activities in their schools. These notes are being organized into coherent "units of work" centering around particular points of interest such as water, milk, care of eyes, prevention of disease, growth, and the like. Each unit includes a variety of teaching activities, both direct and correlated.

About a dozen of these units prepared by individual teachers are now in circulation for further trial throughout the County. Many copies have been distributed to teachers

by district superintendents, nurses, and others. After a lapse of time the teachers are asked to report their experiences with these units in actual classroom use. This procedure should aid not only in evaluating existing material, but also in finding new material.

The type of program which eventually will be set up on a county-wide basis is still problematical. Gradual expansion beyond the two small groups is essential. Numerous opportunities already have arisen to reach more teachers, as for example, through distribution of monthly bulletins and teachers' units, meetings, and visits to schools. In one supervisory district special round-table conferences on health education have been held. At these conferences teachers of the committee told their fellow workers about their individual programs. In another district, a study group of about fifteen teachers has been started. Other available channels will be used as the program develops. Thus there gradually is unfolding a program which can be adapted to the individual pupil, school, and community.

DISTRICT HEALTH ADMINISTRATION IN NEW YORK CITY

THAT the immediate establishment of district health administrations in those sections of New York City where the health problems are most pressing would be the most effective and economical way of meeting the exigencies of the present and of the immediate future, is one of the more important recommendations contained in a report[1] recently submitted by the staff of the Milbank Memorial Fund to Dr. Shirley W. Wynne, Commissioner of Health of New York City and chairman of the Committee on Neighborhood Health Development.

The policy of localizing public health administration in districts already had been adopted by New York City after the wisdom of such a policy was demonstrated in the Bellevue-Yorkville area and by several neighborhood health centers. With the aid of the Committee on Neighborhood Health Development, a division of the City into thirty districts was planned on the basis of careful studies of existing facilities and needs. The City actually appropriated funds for land and buildings for some of the districts and increased health facilities in several of them. Had it not been for the serious changes in financial and economic conditions, New York City, in 1933, would have been well launched on a program of constructing health centers and localizing and developing administrative health functions, district by district. The

[1] "District Health Administration in New York City—Summary of Findings and Recommendations Illustrated by a Proposed Program for Mott Haven Health District," by Edgar Sydenstricker, with the assistance of Carl E. Buck; Margaret Witter Barnard, M.D.; Ira V. Hiscock; and Dorothy G. Wiehl, in cooperation with the Committee on Neighborhood Health Development. Division of Public Health Activities, Milbank Memorial Fund, 1933.

The studies upon which this report is based were undertaken at the request of Dr. Wynne, and the Committee on Neighborhood Health Development.

economic depression not only has caused a postponement of this building program but unfortunately has resulted in an actual curtailment of appropriations for public health and protection.

The report takes cognizance of the fact that there are unmistakable evidences that health problems are becoming more acute in certain sections of the City. In many health areas, within certain districts, infant mortality and mortality from tuberculosis are increasing; the sickness rate in the large unemployed moieties of the population is apparently higher than in other groups; there are indications of increasing malnutrition among children; clinics and out-patient departments are crowded with individuals needing treatment who cannot afford to pay doctors' bills. For the immediate future, therefore, it is urged that the City increase and improve facilities for health protection and the prevention of disease in those areas where the need is greatest.

However, in proposing such a policy, the report states that three conditions should be kept in mind, namely:

1. "That adequate supervision of district health administrations by qualified personnel be provided within the Health Department in order to develop sound district programs and effective administrations."
2. "That properly qualified full-time personnel should be provided for administrative and service positions within each district selected, in order to maintain efficient and economical services to the public."
3. "That existing facilities, both official and voluntary, be utilized to the fullest extent in order that all public health activities be effectively coordinated. Provision for new equipment in the immediate future should be made only when and where it is absolutely necessary."

The principal recommendations contained in this report relate to the necessary machinery within the central Health

Department for health district supervision and promotion, and to health administration and services in each district.

In order to promote the establishment and development of district health administration under the City Department of Health as rapidly as possible, and to bring about proper coordination of the work of the central bureaus and divisions with that of district administrations, three recommendations are offered as follows:

1. That a director of health centers should be provided for by the City to serve under the commissioner or deputy commissioner of health. The duties of such a director would be to supervise the district health officers and their activities and to act as a liaison between the district health officers and the heads of the various bureaus.

2. That the selection and training of at least two types of district health personnel should be undertaken with the least possible delay, namely, district health officers and district superintendents of nurses[2].

3. That a technical advisory committee on district health center administration, composed of five to seven qualified experts in the field of public health, medicine, social work, and nursing, be appointed to assist the commissioner and deputy commissioner of health and the director of health centers on questions of policies and programs.

It is urged that "the foregoing recommendations, particularly as regards a director of health centers, should be put

[2]For the training of district health officers and possibly other public health personnel (with the exception of public health nurses and nursing supervisors and superintendents) it is regarded as highly desirable that suitable courses leading to a certificate in public health should be provided in one of the local universities. An experiment in providing such a course was conducted in 1932–1933 at Bellevue-Yorkville, with Professor Hiscock, Dr. Barnard, and Miss Wiehl as instructors, and with several specialists as lecturers. For the training of district superintendents of nurses, the suggestion was offered that facilities might be provided through the East Harlem Nursing and Health Service.

into effect before any attempt is made to set up localized health administration in several districts."

As regards health administration within a district, it is pointed out that "the specific type of district health administration recommended is one which would be as highly localized as possible under a full-time, properly qualified district health officer who is responsible directly to the commissioner or deputy commissioner of health, or preferably to the director of health centers in the Health Department." As regards services within a district, the report said:

> "Certain of the Department of Health functions within the district should be continued as centralized activities. Among these are the major laboratory services; records and statistics, except for local or district purposes; sanitation; supervision of food and milk supplies; and certain broad aspects of the health education program. Several activities in communicable disease control also could be carried on in the district through borough headquarters if arrangements could be effected providing the district health officer, promptly and currently, with the necessary information pertaining to the district. But it is believed that the district health officer should have direct supervision over all medical services within the district, and should be definitely responsible for (a) the development of the district program; (b) securing the cooperation and participation of the medical profession and the voluntary agencies within the district; and (c) the proper coordination of all district health services. Since the nursing services enter so largely into most of the health services, it is deemed essential that the public health nurses be under the direction of a district superintendent of nurses who, in turn, would be administratively under the district officer in all intra-district activities, but responsible to the Bureau of Nursing in all professional and technical matters."

The following specific recommendations, therefore, as to district health administration and services, were offered:

1. All of the health activities within a health district, with certain exceptions, should be under the immediate supervision of a full-time district health officer responsible directly to the director of health centers. The report emphasizes that the selection of district health officers should be made with extreme care. It urges that district health officers be capable of leadership and yet be willing to learn; that they should enter the position with the full understanding that they take courses in district and general health administration in order to better qualify themselves for their duties.

2. All of the public health nurses within a district should be under the immediate direction of a district superintendent of nurses. The district superintendent of nurses should be responsible to the chief of the Bureau of Nursing on all matters affecting nursing procedure and technique but she should be administratively under the supervision of the district health officer as regards intra-district activities. This recommendation is regarded as next in importance to that for a full-time health officer since public health nursing comes into almost every service in a health administration.

3. The nursing service should be in accordance with a "modified-generalized" plan. This plan probably would provide for specialized full-time nurses in charge of the major clinic services (child hygiene, tuberculosis, and venereal disease). The remainder of the staff would serve the district on a generalized basis and would rotate as needed in the various clinics.

4. That certain health services should be closely coordinated under the immediate direction of the district health officer in accordance with a program to be determined upon by the director of health centers after a survey of the needs and the practical possibilities of development within each district.

The health services regarded as proper functions of district health administration are as follows:

Child Hygiene Services, such as prenatal care, infant care, preschool care, and services for school children, including clinic supervision and education and home nursing.

Tuberculosis Control, including diagnostic clinics for adults and for children, a pneumothorax refill service and consultation chest service. Home nursing and hospital care are essential parts of this program.

Venereal Disease Control, including clinic services and home visiting.

Communicable Disease Control, activities which would be supplementary to the work of the borough diagnosticians and other activities of the City Health Department.

Dental Services, including the development of a preventive dental program and facilities for prenatal cases, preschool children, and children up to the time of graduation from school, in cooperation with the dental profession.

Mental Hygiene, which might include at first the training of medical and nursing personnel in the principles of mental hygiene as applied to health center work, advice to other agencies in the district, treatment of a limited number of cases for teaching and administrative purposes, and community education in the field of mental hygiene.

Health Education, including health education in the schools, health instruction to the community at large, and professional education in public health.

Records and Statistics, which would be limited to intra-district administrative records, use of vital statistics supplied by the Health Department, and compilation of current statistics of intra-district activities.

5. A district advisory committee, representing official and nonofficial health agencies should be appointed by the commissioner of health to cooperate with the County Medical Society and voluntary agencies in planning a program and in developing the initial activities of the district.

6. Although the report laid great emphasis upon the importance of participation of the medical and dental profession in the health activities within a district, no recommendation was made as to definite ways in which this participation could best be carried on, for the reason that it was believed that it could best be worked out gradually as district health administration is developed. It was pointed out that one of the principal functions of the district health officer and of the district advisory committee should be to develop the active participation of these professions.

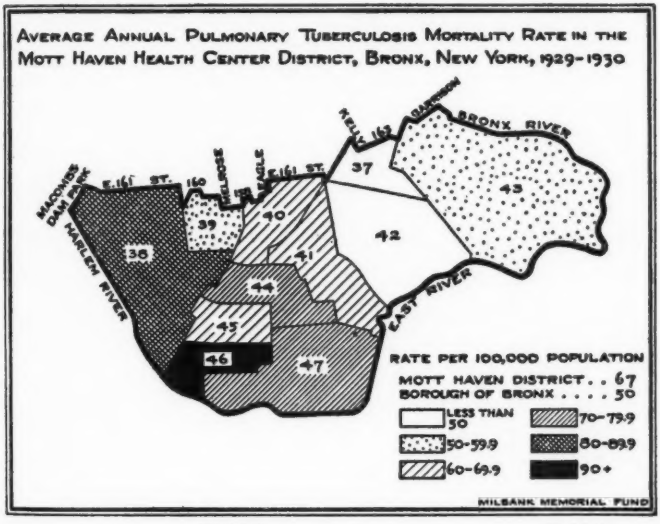
7. The entire district health administration ultimately should be in one building, which would be the district health center, where the offices of the health officer and the nurses' superintendent and the major services would be located. Substations are, of course, essential for certain services.

The report points out that "it is realized that under the present circumstances it will not be possible to provide immediately in each district an ideal (according to current conceptions) health administration, nor a complete program of public health services, nor a completely equipped health center building. But it is feasible, by utilizing existing facilities and buildings, to make existing health services more effective through localized administration on a district basis, to develop these services in accordance with the most pressing needs in each district, and thus gradually to achieve a type of district health administration through health centers that will best meet actual needs in an economical way, *provided only* that there is properly qualified administrative personnel for direction and planning in the Health Department and for supervision within each district."

As an illustration of how the foregoing recommendations could be applied in a district, a detailed study was made of the Mott Haven district. The study included an exhaustive

examination of the health needs of the district; all available statistics of mortality and morbidity were brought together; data were obtained from the United States Census Bureau on race, color, nativity, number and size of families, home ownership, and value of homes and rentals; previous surveys and reports of the City Health Department were utilized and supplemented through personal interviews with bureau and division directors and with the personnel at present

Fig. 1. The average annual mortality rate from pulmonary tuberculosis in the Mott Haven health center district, Bronx, New York, 1929–1930.



	Health Areas	
	No. 46	*No. 38*
Highest tuberculosis mortality	133	88
Highest general mortality	13.15	13.74
Infant mortality	77.7	45.1
Low economic status	$35.90	$41.72
Largest Irish and Negro population and a large poor Italian section		

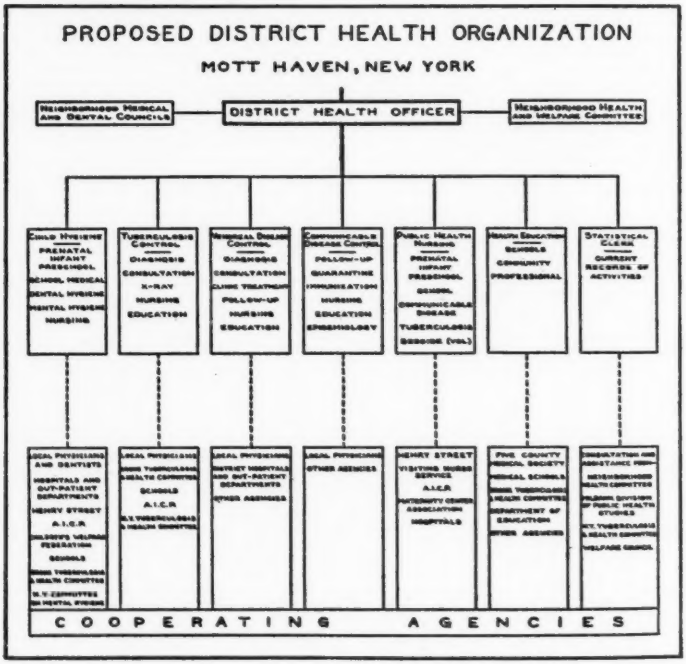
	Health Areas	
	No. 37	*No. 42*
Lowest tuberculosis mortality	40	44
Lowest general mortality	8.52	9.43
Infant mortality	52.8	45.7
Good economic status	$54.62	$45.24
Population chiefly Polish, Russian, Austrian and Hungarian (principally Jews)		

Rates: tuberculosis per 100,000 and general mortality per 1,000 population; infant mortality per 1,000 live births. Average annual rates, 1929–1930. *Economic status:* median monthly rental. 1930 census data were used.

within the district. An example of one phase of this analysis is depicted in the accompanying chart (Figure 1) on tuberculosis mortality by health areas within the Mott Haven district. The present health facilities within the district were also surveyed and, pending results of more qualitative reports now under way, were appraised according to the American Public Health Association appraisal form.

In applying its recommendations to this district, consideration was given in the report to the organization of district health administration as a whole as well as to the immediate development of the specific services. Thus, in the accom-

Fig. 2. Proposed health organization for the Mott Haven health center district, New York.



panying chart (Figure 2) is shown the proposed district health organization in Mott Haven. The suggestions and recommendations as to specific services are too detailed to be reviewed here but a single example may illustrate the nature of these recommendations and the following extract is taken from the part of the report relating to preschool care:

> *PRESCHOOL CARE.* At present, in the Mott Haven area there are no organized facilities exclusively for the care of preschool children, and this service rates only 23 points out of a possible 100 (A.P.H.A. appraisal). They include the following:
>
> > *Baby Health Stations* (Department of Health) designed for children from one to two years, also admit some children two to five years, a total of 1.5 per cent of the preschool population being registered in these clinics, whereas the standard is 30 per cent; *Home Nursing Service* (Department of Health) is included with that for infant care, which has been shown to be inadequate; *Immunization Clinic;* and *Supplementary Facilities* provided at Lincoln and Lebanon Hospitals.
>
> It is now generally recognized in public health work that the period from birth to six years is a most important one in preventive work for the child, and that much of the good accomplished by supervision in the first two years under the present organization is wasted if the child does not come under supervision again until he attends school. Therefore, it would seem that a preschool service is an essential part of a complete district health service. It has been the experience of Bellevue-Yorkville that this service meets a real community need and, once established, grows rapidly; it will be difficult, therefore, to estimate the ultimate adequate amount of such service needed in a new district. As already suggested, this service should begin with children of one year of age—since their problems of diet, hygiene, behavior, et cetera, are fundamentally similar to those of children in the two to six-year group.

The services offered by the preschool clinic should include the following:

1. A complete physical examination on admission.
2. The established "routines" of vaccination against smallpox, diphtheria immunization, tuberculin test, and X-ray of positive reactors.
3. Dental examination.
4. Thorough vision examination, if there is any indication that the child has a vision defect.
5. Education of the mother regarding diet, hygiene, early correct habit formation, the correction and prevention of behavior problems, and advice concerning the correction of defects.

Provision needs to be made for active follow-up service in the preschool clinic, since there is usually more to be accomplished for children of this age than for infants. After one home visit by the nurse to evaluate home conditions and problems, the responsibility of return to the clinic should be placed on the mother. A postcard system to remind the mothers of appointments has been used at Bellevue-Yorkville with excellent results to reduce the "delinquent" visits required of nurses. Other mechanical devices for this purpose should also be tried such as a self-addressed, postage-paid card to be sent to the clinic by the mother if she moves.

Various methods have been found to render the waiting time by mothers and children in the clinic more productive. For example, a person in charge of the children who can make the waiting time pleasant and educational for them has been found of value at Bellevue-Yorkville. Simple games and toys keep the children quiet and happy, and the mothers can be taught how to use similar methods at home and how to straighten out many behavior problems. A child who has been happy and busy while waiting reaches the doctor in a calm and cooperative frame of mind, instead of in a nervous, fretful state. A volunteer may usually be secured for this work. Use may also be made of the waiting time in the clinic to instruct mothers in simple hygienic

procedures and to distribute literature. This is often more economical than endeavoring to get the mothers to return for club-meetings.

Greater economy in organization would be secured if this service uses the space and equipment of the Baby Health Station at alternate periods. From 1:00 p.m. to 4:00 p.m. appears to be a suitable time for this clinic, as the older children have had lunch and have returned to school, so that the mother is free for the afternoon. If the mothers come at 1:00 and the doctor at 1:30, it is possible to finish the clinic by 4:30 p.m.

Personnel and time required for preschool session

Personnel	*Time per Week*	*Budget Year*
Doctor	3 hrs. @ $5 session	$250.00
Charge Nurse	½ day @ $1,870.00	170.00
Asst. Nurse	½ day @ $1,870.00	170.00
Asst. Nurse	½ day @ $1,870.00	170.00
Nurse's Asst.	½ day @ $1,200.00	109.00
Stenographer	½ day @ $1,200.00	109.00
Volunteer	3 hours	.00
Total expenditure per session		$978.00

32 children per session x 50 weeks—1,600 visits. Cost per visit—61 cents.

Clinic Needs. Based on the experience of the Bellevue-Yorkville service, the accompanying set-up is suggested for a unit preschool clinic, which can accommodate in a three-hour session twenty-two children who see both doctor and nurse and ten more who see the conference nurse only, or a total of thirty-two children per session.

In planning the development of such specific services as the foregoing, it was emphasized that the services outlined "are not ideal even when judged by present day 'standards'; rather they are suggested as provisional goals for gradual attainment under conditions that may be expected to continue for some time to come. They are called 'provisional' because undoubtedly they will be modified by experience and by the more complete knowledge of the needs and of ways in which the efficiency of the services can be improved, to which it is hoped certain studies and experiments now under

way will contribute." The plans were based upon (1) a consideration of Health Department policy and organization, existing facilities, and needs within the district, and the practicalities of the present situation as regards funds, buildings, and personnel; (2) the views of bureau chiefs and division heads in the Health Department as to the practicability and soundness of the proposals as they were being drawn up; and (3) practical experience in Bellevue-Yorkville, Health Department, and other services.

The report has received the approval of Commissioner Wynne and of the Committee on Neighborhood Health Development. Whether or not its recommendations, which, in a very real sense, are the results of the cooperative deliberations of practically all official and voluntary agencies interested in the development of public health in New York City, will be put into effect, depends upon the degree of interest that the City's government manifests in the welfare of its citizens.

THE PREVALENCE OF TUBERCULOUS INFECTION IN A RURAL COMMUNITY IN NEW YORK STATE[1]

by EDGAR SYDENSTRICKER AND JEAN DOWNES

THE significance of the tuberculin test as a technique for revealing, with a fair degree of precision, the presence or absence of infection with tubercle, is generally recognized. Early experimentation with the use of the Von Pirquet tuberculin test in the clinics and dispensaries of the larger cities, such as Vienna, Berlin, Lille, New York, and later with the Mantoux test in Philadelphia, led to the conclusion that about 90 per cent of all children are infected with tubercle by the time age 19 is reached. From these findings and from the results of autopsy studies it has been assumed that practically every adult has a little bit of tuberculosis. Slater in 1924 questioned the representativeness of the data from which this conclusion was drawn and called attention to the fact that in a rural community in Minnesota only 10 per cent of 1,654 children, 5–19 years of age, showed tuberculous infection as revealed by the Pirquet test.[2] Since 1924, experiments with the Mantoux tuberculin test among a representative sample of school children in Cattaraugus County in New York State has afforded further evidence that the prevalence of tuberculous infection in another rural area is low, namely, from 7 per cent for farm children to 13 per cent for village children.[3] This low infection rate is due, no doubt, to the fact that there are

[1]From the Division of Research, Milbank Memorial Fund.

[2]Slater, S. A.: The Results of Pirquet Tuberculin Tests on 1,654 Children in a Rural Community in Minnesota. *The American Review of Tuberculosis*, November, 1924, x, No. 3, pp. 299–305.

[3]Korns, J. H.: Tuberculous Infection Among School Children in a Rural Area in New York State. *The American Review of Tuberculosis*, November, 1931, xxiv, No. 5, pp. 532–536.

relatively few sources of tuberculous infection in a given rural area and consequently less chance of contact, casual or close, for the majority of the population.

A low infection rate among children of school age leads naturally to the following question: *Does this low rate of infection persist into adult life in a rural population?* Records of tuberculin testing for a sample of a rural population are now available which may throw some light upon this question.

As a part of an epidemiological investigation of tuberculosis in a rural area, Cattaraugus County, which is being made through the cooperation of the Department of Health of that County, the Milbank Memorial Fund, and the United States Public Health Service, a complete health examination was made available to farm and village families in five townships, beginning in April, 1931, and continuing to the present time. One of the purposes of the examination was to discover the prevalence of tuberculous infection in a random sample drawn from a rural population; consequently, as a part of the health examination, each individual in the family was given the Mantoux tuberculin test and had an X-ray of the chest.

Certain environmental conditions within a population group, which may be factors determining to a large degree the chances of exposure to tuberculosis and the acquisition of infection, should be considered. Among these are: (1) the number of foci, the cases of open tuberculosis within the area; (2) the density of the population, particularly its distribution in population centers of various sizes, the frequency with which persons living in the open country mingle with more urban populations in or out of the area, and economic status as influencing household congestion, and other conditions affecting the opportunity for contact with foci of infection; and (3) the extent to which such conditions as the fore-

going are modified by procedures for the control of the disease. As a background for the data of this study, a brief description of the five townships, with respect to some of these factors, is pertinent.

It is difficult to secure accurate information as to the frequency of occurrence of open tuberculosis in any area. All evidence points to a low prevalence of the disease in Cattaraugus County for at least thirty-odd years. The median annual death rate since 1900 was 67.2, and the highest recorded rate in the period was 92.5.[4] The results of intensive case-finding work since 1923 have corroborated the indications given by the mortality record. Since the population of the five townships has been under close observation for a number of years, it is reasonable to assume that practically all cases of active tuberculosis are known. Early in 1931 there were four families known to have an active case of tuberculosis with positive sputum. In addition, eighteen families were being carried for supervision by the County Bureau of Tuberculosis, in each of which there was either an arrested case of adult pulmonary or latent childhood type tuberculosis.

The five rural townships have a total population of approximately 5,000 in some 1,400 families, predominately native-white families of the older native stock. There are three small villages, varying in size from a total population of 250 to approximately 900 in the largest village. Some contact is maintained more or less frequently with more urban centers nearby—the cities of Salamanca (population 9,000) and Olean (population 23,000), and infrequently with Buffalo (about 60 miles distant)—but the population of the five

[4]Exclusive of deaths of Indian residents and of nonresidents in the J. N. Adam Memorial Hospital at Perrysburg. Even as early as 1880 and 1890, according to the United States Census enumerations, the death rates from "consumption" were only 132 and 108 respectively, and since 1924 all of the annual rates have been under 47 per 100,000 population.

townships may be considered as essentially rural in the ordinary meaning of the term. The economic status of 22 per cent of the families from which our sample was drawn was graded as "comfortable," of 41 per cent as "upper moderate," of 20 per cent as "lower moderate," and of 17 per cent as "poor or very poor."[5] Thus this community may be regarded as neither excessively poor nor very prosperous.

Since 1923, the Cattaraugus County Department of Health has employed throughout the County the following measures for tuberculosis control: an intensive program of case-finding, free diagnostic and consultation services, improved sanatorium facilities, nursing supervision and instruction to prevent the spread of infection in tuberculous households, and a definite program for the eradication of bovine tuberculosis.[6] Consequently, we are considering a population which has had a relatively intensive antituberculosis program for at least eight years.

The data on tuberculin reactions were obtained in a series of general health examinations offered free to families through United States Public Health Service investigators engaged in morbidity and other studies in the area. The examinations were made at a County Department of Health clinic located

[5]The economic status used is that given by the United States Public Health Service investigators who have been conducting a study of illness among these families for a period of three years. The classification given to each family is based upon the general impression formed after the family had been visited several times.

[6]A Note on the Extent of Tuberculin Testing and Tuberculous Infection in Cows in a Rural Area of Cattaraugus County. Milbank Memorial Fund *Quarterly Bulletin*, April, 1931, ix, No. 2, pp. 46–51. In the summer of 1930, the results of tuberculin testing of cattle belonging to 720 households in the five rural townships were checked. Fourteen per cent of the herds and 10 per cent of 7,489 cows were not tested. Of the cows tested 1.6 per cent were stated to have been positive reactors. This rate is nearly double the 0.85 per cent for the entire County as shown by the records of the state veterinarian.

in the largest village in the five townships. Transportation to and from the clinic was made available for families needing it so that distance or lack of transportation facilities would not make the health examination impossible for any family. It was desired to secure, as nearly as possible, a random sample of the families living in this particular area. None of the four families with active tuberculosis, however, was asked to have this special examination; otherwise, it is believed that the bases of selection for the families which constitute our sample were the general interest of the family in health and a willingness to have a health examination which included the tuberculin test.[7] Of the 250 families which availed themselves of the special health examination, 246 were regarded as constituting a fairly random sample of this rural area.

Five hundred and eighty-nine individuals of all ages in the 246 families were given the intracutaneous tuberculin test, beginning with .01 or 0.1 mgm. followed at a 48-hour

[7]It should be pointed out that a scrutiny of the 250 families examined revealed the fact that among them there were eight families known to have arrested tuberculosis. As was stated above, a total of eighteen families in the five townships were being carried for supervision by the Bureau of Tuberculosis because of arrested tuberculosis. If we assume these eighteen families to be evenly distributed among the 1,400, in any sample of 250 families drawn at random, we should expect to have three or four such families. Statistically it is unlikely that the inclusion of eight families came about purely through chance, and, in fact, it is known that the examination of some of them was influenced by the knowledge of arrested tuberculosis. Moreover, families supervised by the Bureau of Tuberculosis are accustomed to clinic examinations and have received some health teaching, and, as a consequence, are probably more easily available for a health examination than are those unaccustomed to clinic attendance. Since the infection rate among members of households with cases of the disease is high, it seems proper to exclude four of the eight families in order to present for purposes of strict accuracy the prevalence of tuberculous infection in a random sample population from a rural area, although their inclusion or exclusion makes little difference in the general results here presented. In all other respects the sample was found to be in close agreement with the population from which it was drawn.

interval by 1.0 mgm. in case no reaction from the previous dose was noted.[8] Two hundred and eight, or 35 per cent, of the total group were found to be positive to tuberculin. It seems entirely fitting to add to this group the records for 435 children, aged 5–19, from the five townships who were given the tuberculin test during 1930 by Dr. John H. Korns as a part of the study of tuberculous infection in school children.[3] As Dr. Korns has stated in his report, the children tested may be considered as a representative sample of apparently healthy school children, since the consent of the parents was the only selective factor.

Table 1. Per cent of individuals at different ages with a positive reaction to the Mantoux test among a random sample population and 435 apparently healthy school children drawn from five rural townships in Cattaraugus County, New York, 1930—April, 1933.

Age Groups	Number		Per Cent Positive
	Total Tested	Positive	
0– 4	53	0	0.0
5– 9	255	17	6.7
10–14	258	21	8.1
15–19	127	25	19.7
20–29	60	20	33.3
30–39	77	42	54.5
40–49	93	59	63.4
50–59	60	41	68.3
60+	41	25	61.0

The prevalence of tuberculous infection at different ages is indicated by the proportion of positive reactors among the individuals tested (Table 1 and Figure 1). In the age period

[8]The tuberculin tests were given and interpreted by a specially trained nurse, Miss Muriel V. Lowry, R.N., under the supervision of Dr. John H. Korns, director of the Bureau of Tuberculosis, Cattaraugus County, during the period April, 1931–February 15, 1933. Dr. J. H. Wylie assisted in the supervision of the tuberculin tests from April, 1931 to February 15, 1932. Since February 15, 1933, the tests have been given and interpreted by Mrs. Alcesta R. Owen, R.N., who was instructed by Miss Lowry and under the supervision of Dr. Ralph E. Wheeler, epidemiologist, Milbank Memorial Fund and consultant, United States Public Health Service. The tuberculin used was Old Tuberculin (human) prepared and standardized by the New York State Department of Health, and most of the tuberculin used in this study was further standardized on guinea pigs by Dr. J. D. Aronson of the Henry Phipps Institute, Philadelphia.

0-14 years only a gradual increase in the prevalence rate appears from 0 for children under five to 8 per cent for those 10-14 years of age. For the age period 15-19 years the rate more than doubles, rising to 19 per cent. From 20 to 39 years of age the increase in positive reactors is still more rapid, rising from 19 per cent to approximately 55 per cent for the age group 30-39. From age 40 the increase is less rapid with the highest proportion of reactors, 68 per cent, among individuals 50-59 years of age. For persons over 59 the rate instead of increasing or remaining constant, is less than that for the earlier decade. This discrepancy for the older ages may be accidental or it may be interpreted as indicating a loss of sensitivity to tuberculin among older people.

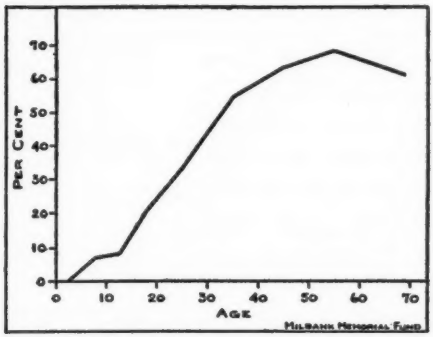


Fig. 1. Prevalence of tuberculous infection at different ages among a random sample population and 435 apparently healthy school children drawn from five rural townships in Cattaraugus County, New York, 1930–April, 1933.

So far as the authors are aware, no data are available in the literature on the prevalence of tuberculous infection among a random sample of white adults with which strict comparisons could be made with these presented for the rural townships in Cattaraugus County. Two or three other reports may be referred to, however. Aronson,[9] reported the results of the intracutaneous tuberculin test among a group of white farm families living on an isolated country road in

[9]Aronson, J. D.: Incidence of Tuberculous Infection in Some Communities of the South. *The American Journal of Hygiene*, September, 1931, xiv, No. 2, pp. 374–393.

Sunflower County, Mississippi. One hundred and thirteen individuals were tested, only 52 of whom were over 20 years of age. The per cent of persons found positive at different ages is shown in Table 2. The rates for each age group are much higher for the farm families in Mississippi than those for the five townships in New York State, but the increase in prevalence with age is similar in both groups. The prevalence of tuberculous infection among children 5-14 years of age in various groups drawn from metropolitan areas indicates a rate as high or higher than the rate among adults 40 years or older in our sample of a rural population. Among 1,000 children 13 and 14 years of age in the Bellevue-Yorkville district of New York City, 67.3 per cent reacted to the intracutaneous test.[10] In Philadelphia, 79.7 per cent of white school children reacted to tuberculin at age fifteen.[11] These rates contrasted with rates of 63 or 68 reached at ages 40-59 in the five townships indicate a very much slower rate of infection in a sparsely settled rural area.

Table 2. Per cent of individuals at different ages with a positive reaction to the Mantoux test in a group of isolated farm families, Sunflower County, Mississippi.[9]

Age Groups	Number		Per Cent Positive
	Total Tested	Positive	
All Ages	113	62	54.9
0– 9	32	10	31.3
10–19	29	12	41.4
20–29	14	9	64.3
30–39	13	11	84.6
40–49	11	9	81.8
50+	14	11	78.6

The lag in the cumulative curve of tuberculous infection in the five townships as compared with curves for urban

[10]Barnard, M. W.; Amberson, J. B.; and Loew, M. F.: Tuberculosis in Adolescents. *The American Review of Tuberculosis*, May, 1931, xxiii, No. 5, pp. 593–641.

[11]Hetherington, H. W.; McPhedran, F. M.; Landis, H. R. M.; and Opie, E. L.: A Survey to Determine the Prevalence of Tuberculous Infection in School Children. *The American Review of Tuberculosis*, October, 1929, xx, No. 4, pp. 421–510.

Age Groups	Per Cent Infected (1)	Per Cent Noninfected (2)	Per Cent Acquiring Infection[1] (3)	Incidence Among Noninfected[2] (4)
0– 4	0.0	100.0	0.0	0.0
5– 9	6.7	93.3	6.7	6.7
10–14	8.1	91.9	1.4	1.5
15–19	19.7	80.3	11.6	12.6
20–29	33.3	66.7	13.6	16.9
30–39	54.5	45.5	21.2	31.8
40–49	63.4	36.6	8.9	19.6
50–59	68.3	31.7	4.9	13.4
60+	61.0	39.0		

[1]Estimated from the difference between cumulative percentages at different age groups in column (1).

[2]Calculated by relating the per cent acquiring infection in a specific age group to the per cent noninfected in the preceding age group.

Table 3. Calculated incidence of tuberculous infection at different ages among a random sample population drawn from five rural townships in Cattaraugus County, New York, 1930—April, 1933.

areas is in general accord with a conclusion drawn from the results of a study of other infectious diseases in this same area,[12] namely, "The more rural the population . . . the higher are the ages at which each of these diseases (measles, scarlet fever, and whooping cough) occur."

The frequency with which infection was acquired at various age groups in this sample population can be estimated by computing the differences between the cumulative percentages for successive age groups (Table 3, column 3). Approximately 7 per cent of the children over four years of age acquired infection at ages 5-9 and only 1.4 per cent at ages 10-14. The proportion of individuals who acquired infection during the age period 15-19, is somewhat higher than for those in the younger ages. Thirteen per cent acquired infection between 20 and 29 years of age and the incidence of infection reaches its peak (21 per cent) during the age period 30-39. After age 40 the proportion of the population acquiring infection declines.

[12]Sydenstricker, Edgar, and Collins, Selwyn D.: Age Incidence of Communicable Diseases in a Rural Population. United States *Public Health Reports*, January 16, 1931, xlvi, No. 3, pp. 100–113.

The cumulative percentages also afford a basis for estimating the incidence of infection among persons of different ages not previously infected (Table 3, column 4, and Figure 2). Without attempting to attach too much significance to the exact percentages, it is interesting to note that the incidence of infection increases rapidly after age 14 to its peak in the age group 30-39, and after age 40 declines with almost equal rapidity. These variations in the incidence of infection may be regarded as a crude indication of variations in the opportunity for exposure to tuberculosis at different ages under rural conditions.

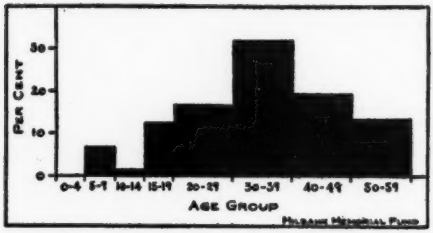


Fig. 2. Calculated incidence of tuberculous infection at different ages among a random sample population drawn from five rural townships in Cattaraugus County, 1930–April, 1933.

Without attempting too broad conclusions from the findings in one rural area two observations may be ventured as hypotheses: (1) that the late acquisition of infection is closely associated with delay in the widening of environment for the individual and, as a consequence, delay in the chances of contact with tuberculosis outside the home; and (2) a considerable proportion of the population escapes infection until adult life when, since tuberculosis for the most part is a chronic disease of adults, opportunities for contact with tuberculosis increase. The data here presented do not throw any direct light on the question of tuberculous infection among a population as a protection against reinfection. As Opie[18] says:

[18]Opie, E. L.: Recognition and Control of Tuberculosis of Childhood. *American Journal of Public Health*, April, 1933, xxiii, No. 4, pp. 305–315.

> "All we know about immunity against tuberculosis indicates that infection confers some, but limited, resistance to the disease. We have very little direct information about the fate of those who are exposed for the first time during adolescence or early adult life to infection. Anatomical observations demonstrate that such first infection often pursues a rapidly fatal course."

Myers,[14] in discussing the experience of the Lymanhurst School with tuberculosis in children, makes the following statement:

> "From our own observations and the findings of others the fact is becoming quite clear that the potential future tuberculosis load of any community is found among the apparently healthy children and adults of that community who react positively to the tuberculin test. In other words, we cannot subscribe to the view that a positive tuberculin reaction is a favorable sign."

Though we cannot regard a positive reaction to tuberculin in childhood and early adult life as an indication of immunity to further infection and tuberculous disease, neither can we use it, even in a rural area, to identify with certainty those who will develop clinically manifest tuberculosis.

SUMMARY

A low rate of infection, 35 per cent of 589 individuals of all ages, is indicated by the results of the intracutaneous tuberculin test among a sample population drawn from five rural townships in Cattaraugus County, an area where all available evidence (mortality and morbidity records) points to a low prevalence of tuberculous disease. The age specific rates of tuberculous infection indicate a gradual increase for individuals under 15 years of age, 0 for children under five, to

[14]Myers, J. A.: The Experience of the Lymanhurst School with Tuberculosis in Children. *Tubercle*, February, 1933, xiv, No. 5.

8 per cent for those aged 10-14; after 15 years of age the increase is much more rapid rising from 19 per cent (age 15-19) to 55 per cent for the age group 30-39; from age 40 the increase is less rapid with the highest rate of infection, 68 per cent, among individuals 50-59 years of age. This increase in the prevalence of tuberculous infection with age is much slower than that found for groups drawn from metropolitan areas; for example, rates of 67 to 79.7 for children aged 13-15 in New York City and Philadelphia were not attained in the rural population until ages 40-59. The estimated incidence of infection among persons of different ages not previously infected, increases rapidly after age 14 to its peak in the age group 30-39, then declines with almost equal rapidity. The data for the sample population in this rural area suggest: (1) that the late acquisition of infection is closely associated with delay in the widening of environment for the individual and, as a consequence, delay in the chances of contact with tuberculosis outside the home; and (2) a considerable proportion of the population escapes infection until adult life when, since tuberculosis for the most part is a chronic disease of adults, opportunities for contact with tuberculosis increase.

THE X-RAY IN TUBERCULOSIS CASE FINDING[1]

PRELIMINARY REPORT OF X-RAY SURVEYS OF 20,000 INDIVIDUALS ON HOME RELIEF IN TWO DISTRICTS OF NEW YORK CITY, 1933

by MARGARET WITTER BARNARD, M.D.

VITAL statistics for New York City by small areas, recently made available, have brought forcibly to the attention of those concerned with tuberculosis control the wide variation in tuberculosis mortality in different sections of the City. Although the tuberculosis death rate for New York City dropped from 69.4 in 1931 to 62.9 in 1932, there were several "sore spots" where the rates were from three to six times that for the City as a whole. For example, in the Central Harlem Section, the rate in 1932 was 250. In this district the population is predominantly negro, with extremely crowded housing conditions and a low economic status, recently much accentuated by the general depression. There are in New York City approximately 44,908 Porto Ricans who tend to live in colonies, one of which is in the East Harlem area. Among Porto Ricans in New York City, the average tuberculosis death rate in 1930-1931 was 434 compared with 69 for the City as a whole. Two other areas with unusually high tuberculosis death rates are in Brooklyn (Red Hook-Gowanus and Williamsburg-Greenpoint). In all of these "sore spots," the same general conditions prevail—low economic status, poor and crowded housing facilities, and certain racial elements in the population—all of which conditions are generally associated with a high prevalence of tuberculosis. It is evident from the high tuberculosis death rate that there must be among these groups much undiscovered tuberculosis and many unknown foci of

[1]This paper was read before the National Tuberculosis Association at its annual meeting held in Toronto, Canada, in June, 1933.

infection urgently in need of control. In view of the general limitation of budgets and public health facilities at this time, the problem of further work in these areas is a serious one.

In December, 1932, an opportunity presented itself, not only to render a definite community service, but also to study a new method of dealing with the problem of tuberculosis by making a rapid X-ray survey of between ten and eleven thousand individuals from sections of the City where death rates are high and where the Porto Rican and negro groups predominate. This survey, under the direction of Dr. Shirley W. Wynne, Commissioner of Health of New York City, was carried out as one of the work projects for medical and nursing service, under an appropriation by the State Temporary Emergency Relief Administration. Supervision was furnished by members of the staff of the Department of Health, but the rest of the personnel (medical, nursing and clerical) were taken from doctors, nurses, and others applying for assistance.[2] Since it was stipulated that the individuals who were to be included in the survey were to be taken from those receiving home relief, the family lists of Relief Precincts 23 and 24 were utilized for the survey. These precincts, which correspond roughly to the East Harlem and Central Harlem health areas, were chosen because:

1. Judging from the high tuberculosis mortality rates, a high prevalence of tuberculosis might be expected;

[2]The Milbank Memorial Fund also cooperated in this project by a grant of funds and the contribution of the additional services of Dr. Margaret W. Barnard and Dr. Israel Steinberg. The analysis and tabulation of the data have been made by the Research Division of the Fund. Grants were also made by the National Tuberculosis Association and certain individuals. Appreciative acknowledgment is made to Miss Jane Hoey, assistant director of the Welfare Council, who acted as liaison officer between the State and City relief administrators and the Department of Health, and to Dr. Max Soletsky, Miss Josephine Kieber and Miss Mary V. Scott of the Department of Health staff, for their assistance in the supervision of the project.

2. The population includes a high percentage of negroes and Porto Ricans;
3. So large a proportion of the population is on home relief that a group selected from relief lists would probably be fairly representative of the area.

All members, ten years of age and over, of families taken from relief lists were asked to report for this examination. No particular authority could be exercised over this group, but it was expected that they would respond to notification by relief inspectors. This method was not at all successful and the families were then notified by postal cards with somewhat better results. It was not, however, until a group of nurses made home visits and explained to the families that this examination was being made by the Department of Health that the people really responded.

The newly developed Powers' method for rapid X-ray survey was used. This company has developed a comparatively inexpensive paper film in roll form and a series of synchronized units of procedure, which made it possible to take X-rays of large numbers of individuals in a short time. It was possible to make the exposures at a rate of four per minute, and a rate of 150 an hour could be sustained without difficulty. The company furnished all necessary equipment and personnel for the X-ray procedure, and delivered to the organization the developed films in roll form at a set price per capita. Approximately 11,000 were X-rayed in six weeks time.

The developed films were delivered to the Bellevue-Yorkville Health Demonstration, where they were interpreted by Dr. Marion Franklin Loew and several assistants. Each film was read independently by two people and any differences of opinion were referred to Dr. J. Burns Amberson, Jr. as consultant. It took about eight weeks to complete the

reading of the films, which were then cut and distributed to the follow-up clinics.

The diagnoses were classified primarily from an administrative viewpoint, rather than clinical, so that the follow-up clinics might be started as soon as possible. Cases were cleared with the tuberculosis register of the City, and those not previously known were examined in the clinic and placed under care. All household contacts were examined except those who had been found negative in the X-ray survey. These contacts were mainly the children under ten years of age who were tuberculin tested and X-rayed if positive to tuberculin. When this follow-up had been fairly well cleared, the work was turned over to the official clinics of the district. Results of the follow-up will be available at a later date.

After the Harlem project was found to be productive, a similar survey was conducted in the Red Hook-Gowanus section in Brooklyn. 10,000 individuals were X-rayed during April and May, and the follow-up work is now being carried on.

The findings presented in this preliminary report are from tabulations of 10,232 individuals in Harlem and 8,517 in

Table 1. X-ray surveys of 18,749 individuals (10,232, Harlem and 8,517, Brooklyn) in New York City, 1933.

Administrative Classification of Cases to be Investigated	Number			Per Cent		
	Harlem	Brooklyn	Total	Harlem	Brooklyn	Total
Total cases to be investigated	1,802	977	2,779	17.6	11.5	14.8
Total tuberculosis	1,254	793	2,047	12.3	9.3	10.9
Definite	221	255	476	2.2	3.0	2.5
Suspect	506	86	592	4.9	1.0	3.2
Healed	527	452	979	5.2	5.3	5.2
Cardiac	548	184	732	5.4	2.2	3.9

Brooklyn. Table 1 shows the number and per cent of persons in each district who needed further medical investigation. 1,254, or 12.3 per cent, of the 10,232 persons X-rayed in Harlem and 793, or 9.3 per cent, of the 8,517 persons X-rayed in Brooklyn were diagnosed as having tuberculosis (definite, suspect, or healed). In addition there were found a large number of cardiac conditions needing further investigation, 5.4 per cent of the Harlem group and 2.2 per cent of the Brooklyn group. The higher rate of cardiac conditions among the Harlem population X-rayed is due to the very high rate (8.2 per cent) found among the colored.

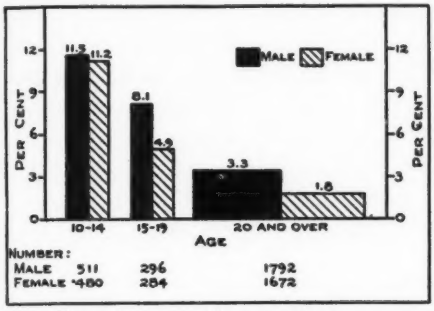


Fig. 1. Per cent of 5,035 white persons in Harlem classified as suspect tuberculosis according to age and sex, New York City, 1933.

There is a marked difference in the two areas in the per cent of persons classified as having suspect tuberculosis; the rate is approximately five times as high in Harlem as in Brooklyn (4.9 against 1.0). The cases of suspect tuberculosis in the Harlem population were concentrated in the age groups 10-14 and 15-19 (Figure 1). For example, 11 per cent of the males aged 10-14 compared with 3.3 per cent among males aged 20 and over were diagnosed as suspects.[3] This fact raised an important administrative problem. Since we were to deal largely with family groups and could rely upon the

[3]Figures 1 and 2 are based on the white individuals examined in Harlem. The same differences in the age specific rates were found among the colored and Porto Rican group.

follow-up to reach the contacts in the families, would not the survey in Brooklyn be more productive if we concentrated our efforts on the age group shown (Figure 2) to yield a higher percentage of persons with definite tuberculosis? For example, in the age groups over twenty, the yield of definite tuberculosis was from six to ten times as great as for the group below twenty years of age, (2.7 to 4.1 compared with 0.4). The higher rates among the adult males in all age groups except 20-29 warranted special emphasis being placed upon the examination of the male members of the families. Accordingly, the survey in Brooklyn was planned to include members of relief families fifteen years of age and over. The group 15 to 19 years was retained because of the importance of discovering early adult types of lesions among them.

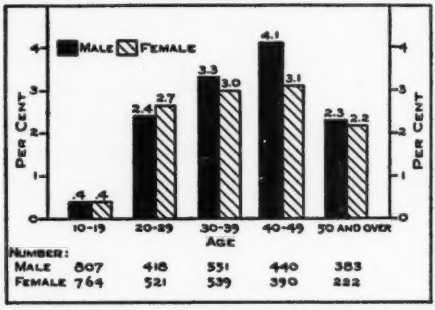
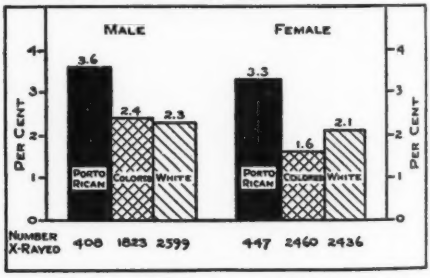


Fig. 2. Per cent of 5,035 white persons in Harlem with definite tuberculosis classified by age and sex, New York City, 1933.

Fig. 3. Per cent[1] of 10,173 persons in Harlem found by X-ray to have tuberculosis, New York City, 1933.



[1]These are adjusted per cents obtained by applying the per cent for each age group to the age distribution of the combined white, colored, and Porto Rican populations X-rayed.

It is of interest to note the differences (Figure 3) among the three groups in Harlem—Porto Ricans, colored and white. As

would be expected from their high tuberculosis mortality rate, the per cent of individuals diagnosed as having definite tuberculosis was much higher among the Porto Ricans. It is surprising (1) that there was no significant difference between the rates for the colored males and white males diagnosed as definite tuberculosis, and (2) that among the females, the rate for the colored was lower than for the white.

The total expenditure for the survey part of this project in Harlem was approximately $20,000, or a per capita cost of $1.78. Through more experience and better organization, this was reduced in the Brooklyn project to approximately $12,000, or $1.22 per capita. It would not have been possible by any other method to have so quickly and easily surveyed this large number of individuals and selected those needing care.

NEWS DIGEST

◉ ◉ ◉ *Factors Influencing the Ratio of Children to Native-White Women in the United States*

THE editor regrets that due to the amount of material pressing for publication it has been impossible to include in this issue an article by Dr. Frank Lorimer of the Eugenics Research Association entitled, "Factors Influencing Ratios of Children to Native-White Women in the United States, 1900 and 1930." The article has already been distributed as a preprint to a limited mailing list and copies are available on request.

Dr. Lorimer's paper is a further discussion of problems raised by two earlier articles appearing in the *Bulletin*. One, by Edgar Sydenstricker,[1] on the basis of a study of Cattaraugus County, New York, suggested the possibility that the fertility of our native-white population might not be changing rapidly in areas in which the environment was not greatly changed. The other article, by Walter F. Willcox,[2] suggested that in those areas where the fertility of the native-white population had changed little, the lack of change was not due to an absence of declining fertility in the older native stock, but to the fact that such declines were masked when the entire native population was considered, by the recruiting of the native population from the children of the more prolific foreign-born population. It was suggested that this shift in composition of the native-white stock might account for the absence of a decline in the fertility

[1]Sydenstricker, Edgar: A Study of the Fertility of Native-White Women in a Rural Area of Western New York. Milbank Memorial Fund *Quarterly Bulletin*, January, 1932, x, No. 1, pp. 17-32.

[2]Willcox, Walter F.: Changes Since 1900 in the Fertility of Native-White Wives. Milbank Memorial Fund *Quarterly Bulletin*, July, 1932, x, No. 3, pp. 191-202.

of the population observed in Cattaraugus County.

Dr. Lorimer points out that Professor Willcox's data are subject to further refinement. Professor Willcox had examined the ratios of children under five years of age with native-white fathers and mothers, to native-white married women of child-bearing age. But since the denominator of this fraction includes all native wives, the numerator should include all children with native mothers, and not simply those whose fathers were also native. Dr. Lorimer makes these corrections and finds that the fertility of the native-white population increased between 1900 and 1930 only in certain of the New England states, although it is "reasonable to suppose that the situation in some rural areas in New York, e.g. Cattaraugus County, is similar to the situation in northern New England."

In the case of certain states, Dr. Lorimer believes Professor Willcox's explanation, that the increase or relatively slight decline in fertility is due to the infiltration of foreign stock into the native population, is correct. But in the case of the three states of northern New England he believes it is not adequate. For these three states he shows that even if one assumes that the foreign stock of the native population is exceptionally fertile, the fertility of the older native stocks would still have had to remain unchanged since 1900 in order to yield the ratios observed in 1930 for the entire native-white group.

He concludes, therefore, "that we are still confronted with a stabilized effective natality in the old native stocks in some rural areas, in the face of a sharp decline in natality in most parts of the country. Thus the census data reveal a situation which is essentially identical with that revealed by the special study in Cattaraugus County. . . . The outstanding significance of the data which we have reviewed seems to be that the natality of the native-white population in some sections of the United States may be approaching a fair degree of stabilization, but at different levels in different types of communities—with conspicuous differentials between rural-farm, rural-nonfarm, and urban groups in most localities."

⊙ ⊙ ⊙ *The Relation Between Social Status and Fertility is Discussed*

"THE Bearing of the Differential Rates of Increase Among

Social Classes upon the Quality of the American Population" was the topic of discussion at a joint meeting of the Population Association of America and the New York branch of the American Statistical Association held at the Town Hall Club on May 12, 1933.

The leading papers were presented by Dr. Frank W. Notestein, staff member of the Milbank Memorial Fund, who discussed the relation between social status and fertility, and by Professor Frank Hankins of Smith College, who discussed the biological and environmental significance of differential fertility to the quality of the population. A discussion of these papers was led by Dr. Frank Lorimer of the Eugenics Research Association, Dr. Louis I. Dublin of the Metropolitan Life Insurance Company, and Dr. Earl T. Engle of the College of Physicians and Surgeons, Columbia University.

Dr. Notestein called attention to the fact that the "lower" classes had long been more fertile than the "upper" and that the differences have been increasing since before the beginning of the century. At present, he said, the white-collar classes were not reproducing rapidly enough to maintain equal permanent replacement, but the unskilled laborer class and the agricultural population appear to be reproducing more rapidly than is required to maintain their numbers.

⊛⊛⊛ *Vaginitis Study in Bellevue-Yorkville District is Completed*

THE results of four and a half years' study of the prevalence and control of childhood vaginitis in the Bellevue-Yorkville district of New York City have just been made available under the title, "Cervico-Vaginitis of Gonococcal Origin in Children." A limited number of reprints of the report are procurable from the Fund, which financed the study through the Bellevue-Yorkville Health Demonstration.

Agencies dealing with girl children had felt acutely the need for fuller information about certain aspects of vaginitis, a problem of medical, sociological, sanitary, and economic importance, when in July, 1927, the research project was inaugurated at the suggestion of Dr. Shirley W. Wynne, Commissioner of Health of New York City.

The committee appointed, composed of experts in the medical and social fields, outlined a

far-reaching program providing for intensive research. This included clinical, bacteriological, and sociological methods of diagnosis and procedure; comparative methods of treatment; laboratory technic; social service and follow-up; and history forms for medical and social data.

The objectives of the study were briefly as follows: (1) to study each individual case in its entirety, including a complete physical examination; (2) to determine if possible the causes of the local conditions, evaluating the clinical, pathological, and bacteriological findings; and (3) to compare the methods of treatment and to secure a complete sociological picture and examination of contacts.

The findings of the survey are presented from three points of view. The data collected in the clinic are discussed by Dr. Walter M. Brunet, director of the study, and Dr. Dora M. Tolle. The bacteriological aspects are evaluated by Miss Sara Alicia Scudder, who had charge of this phase of the work, and Miss Anne Ruth Medcalf writes on the medical social service activities.

Of 241 children selected for intensive study, 192, or 79 per cent were judged to have positive clinical gonorrhea. Of these 192 children, 101 were recorded as having acute cases at the time of their first examination. At the end of the period of care, there were only 9 cases remaining in this grouping, while the number of suspicious cases had dropped from 33 to 21, and the number of negative cases had risen from 16 to 68.

● ● ● *State Aid in 1933 Is Assured for Counties Having Health Units*

THE New York State Legislature, in the recently passed budget bill for the current fiscal year, authorized the full amount of the appropriation of $442,000 requested by the State Commissioner of Health, Dr. Thomas Parran, Jr., for State aid to the counties maintaining county departments of health.

For the first time, the subsidy contained provisions for the granting of State aid in meeting the operating expenses of county tuberculosis sanatoria in counties having health departments. This policy was promulgated last August by Dr. Parran as a method of encouraging the establishment of health departments in counties having less than 150,000 population. The counties benefiting by these subventions are Cattaraugus, Suffolk, and Columbia.

● ● ● *Cattaraugus County Department of Health Completes Its Tenth Year of Activity*

THE year 1932 completed the first decade of public health work on a county-wide basis in Cattaraugus County. In making public the tenth annual report of the County Department of Health, Dr. Reginald M. Atwater, the commissioner of health, said, "The modest number of activities started in 1923 has been slowly increased. At the end of 1932, in addition to the tuberculosis work and the laboratory, the County maintained a communicable disease service for diagnosis, consultation, and immunization; venereal disease clinics in Salamanca and Olean, with provision for treatment of indigent cases in remote sections; a corps of public health nurses, located in eight district stations; a bureau of maternity and child hygiene, concerned with the health of the child throughout pregnancy, birth, and infancy, and up to school age; as well as a sanitary engineer and a sanitary inspector working toward the protection of water and milk supplies."

The scope of activities of the Department was practically unchanged throughout 1932, according to the report. The budget upon which the Department of Health operated was $70,000. The total expenditures for the year amounted to $69,999.97, of which 50 per cent was returned to the County in the form of State aid, making the net cost to the County $34,999.99, or less than fifty cents per capita.

The general mortality rate for Cattaraugus County in 1932 was 14.2, which, Dr. Atwater pointed out, was slightly higher than it had been for the past three years. There were 26 deaths from tuberculosis during the year—a mortality rate of 35.8. Since 1927 the death rate from tuberculosis in the County has been consistently below 50 per 100,000 population, and for the last two years it has been less than 40. The rate in 1932 was a 50 per cent decrease from the rate of 71.4 recorded in 1922.

For the second consecutive year, there were no cases of smallpox in the County, and there were but eight cases of diphtheria, none of which resulted fatally. The average age of those attacked by the latter disease was over twenty-one years, and only one was of preschool age. At the end of the year, 16,144 residents had been given toxin-antitoxin immuniza-

tions. Of this number, 2,016 were children of preschool age, or 31 per cent of all the children in this age group living in the County.

There have been no deaths from typhoid fever in the area in the past three years, although seven cases were reported during the year. Scarlet fever was reported as the cause of death in five instances, with 406 cases recorded for the year.

John Walrath, president of the County Board of Health, in his foreword submitting the report to the Board of Supervisors, said, "The program of the Health Department has been in progress for ten years. It has proved its value to our people all along but especially in these trying times. The need of its service is greater than ever before. . . . There is no county investment that returns a value in human lives saved and human welfare advanced comparable with the Health Department."

●●● *Bellevue-Yorkville Cooperates in Campaign for Early Diagnosis of Tuberculosis*

"KNOWLEDGE has begun the conquest of tuberculosis," said Dr. Livingston Farrand, in a recent radio address given in New York City in a special educational campaign for the prevention and control of tuberculosis held in the Bellevue-Yorkville Health Demonstration area. This project was a part of the national campaign for the early diagnosis of cases of this disease in which the National Tuberculosis Association has been engaged. "Tuberculosis has lost its place in the list of fatal diseases as the leading cause of death," he continued. "Knowledge can largely eliminate it as a public health problem. We know that sufferers from tuberculosis should not mingle intimately with other persons and, if possible, they should receive sanatorium or hospital treatment. We know that tuberculosis can be discovered with the assistance of the tuberculin test and X-raying months and even years before active disease occurs. We know that a proper regimen of rest and diet, sunshine and fresh air can build up the bodily resistance of children and adults who have contracted the disease in its early stages."

Dr. Donald B. Armstrong, third vice-president of the Metropolitan Life Insurance Company, who also spoke over the radio in connection with the campaign, warned against over-

confidence in regarding tuberculosis as a vanquished disease. He urged intelligent public support of health authorities and voluntary health agencies in their battle against tuberculosis during these critical days. "No one can estimate the ultimate effects of the depression, especially upon a disease like tuberculosis," he said. "No one can say what may be the harvest in this disease following the underfeeding and malnutrition that accompany such a period of stress. No one can forecast the serious results that might follow these conditions if people are unaware of the hazards and if appropriations and contributions for work by health departments and tuberculosis associations are not maintained on an adequate level."

Over 10,000 pieces of literature on tuberculosis were distributed to families in the Bellevue-Yorkville district.